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ABSTRACT

This report surveys the degree of progress made in the last 10 years toward achieving the goals of student aid programs: promoting equal access and equal institutional choice, and advancing equal retention and completion. Note is made of the impact of extending equal educational opportunity. General enrollment and student aid trends are reviewed, with the cost of attendance and its impact on students' decision to attend or not attend being considered at length. There is also an examination of the effect of student aid on enrollments by looking at the influence it has on the college attendance decisions of aid recipients. The low income group is increasing its share of private enrollments; the higher income group is increasing its share of university enrollments; the middle income group representation at both private and public institutions is decreasing. Although major progress has been made in providing access, the poor, minorities, and women are still not doing well when retention and completion are considered, and blacks, in particular, continue to be somewhat underenrolled. The most severe effects of rising costs have been experienced by middle income youth, who qualify for little or no student aid; needs analysis procedures and funding levels should be revised to provide limited benefits to students from middle income families. (JMF)

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Higher Education Opportunity: A Decade of Progress

Larry L. Leslie

ERIC/Higher Education
Research Report No. 3
1977

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Foreword

This report surveys in a definitive way the degree of progress made in the last 10 years toward achieving the goals of student aid programs: promoting equal access and equal institutional choice, and advancing equal retention and completion. Note is made of the salutary impact of the growth of federal and state need-based student aid programs on extending equal educational opportunity. General enrollment and student aid trends are reviewed, with the costs of attendance and its impact on students' decision to attend or not attend being considered at length. There is also an examination of the effect of student aid on enrollments by looking at the influence it has on the college attendance decisions of aid recipients. Some findings are the low-income group is increasing its share of private enrollments, while the high-income group is increasing its share of university enrollments. On the other hand, the middle-income group representation at both private and public institutions is decreasing. Although major progress has been made in providing access, the poor, minorities, and women are still not doing well when retention and completion are considered and blacks, in particular, continue to be somewhat underenrolled. The author points out that the most severe effects of rising costs have been experienced by middle-income youth, who qualify for little or no student aid, and comments that needs analysis procedure and funding levels should be revised to provide limited benefits to students from middle-income families. Extensive tabular data are included in this report. Larry L. Leslie is professor of higher education at the College of Education, University of Arizona.

Peter P. Muirhead, Director
ERIC/Higher Education

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Overview

Approximately ten years ago a new public policy priority for American higher education began to emerge. That priority called for equal opportunities for youth from low-income families, for minorities, and, somewhat later, for women.

The vehicles employed to advance this priority were several: among them, the removal of certain discriminatory practices; the introduction of "affirmative action" programs; and, of specific relevance to this research report, the establishment of financial subsidies to students, or "student aid."[1]

The purpose of this research report is to assess the degree of progress that has been made during the past decade in meeting the goals of student aid programs. These goals are: (1) the promotion of equal *access;* (2) the promotion of equal institutional *choice;* and (3) the advancement of equal *retention and completion.*

The assumption that student aid will advance these three goals is grounded in economic demand theory, which has been shown to apply to higher education. For example, it is known that the demand for higher education, i.e., enrollment, is related to the price, or cost of attendance. Also, it is known that "cross price" effects operate in higher education: the net cost of enrolling in one institution affects enrollments in other institutions. In theory, student aid reduces the net price of higher education to the student and thereby acts to increase enrollments overall (i.e., *access*) and to change enrollment distribution patterns among various types of institutions (i.e., *choice*).[2]

As an initial step in this assessment, more precise definition of terms is required. What is meant by equality of opportunity or equity in regard to these three goals and how is it to be measured?

For several pragmatic reasons, it is necessary, in the formulation

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[1] The important federal legislation in regard to need-based student aid programs, which are the major vehicles for promoting equal higher education opportunities for students, are the Higher Education Act of 1965, as amended, and the Education Amendments of 1972. Many states have adopted their own version of these programs. The GI bill and Social Security legislation also provide major amounts of student aid, although this aid is not need based. Other important "equality" instruments affecting higher education are the Civil Rights Act of 1967, as amended, and Executive Order 11246 of 1965, as amended in 1967.

[2] For a recent review of the evidence of this in higher education, see Michael J. McPherson, "The Demand for Private Higher Education," in *Public Policy and Private Higher Education*, The Brookings Institution, forthcoming.

of the standards necessary for assessment, to define equal opportunity as equal enrollment rates or as equal completion rates, as the case may be. The most elementary of these reasons is that no one is quite sure how opportunity can be measured except when it is exercised. A corollary is that the enrollment data necessary for evaluation exist, but data regarding "opportunities" to enroll are lacking. A second reason is probably that enrollment, not *opportunity* to enroll, is consistent with the concept of economic demand, which is the framework of present public student aid policy; thus, the outcomes of this policy can only be interpreted clearly when assessment measures are consistent with the elements of this theory. Finally, for these two reasons, and perhaps for others that are political, the definition of opportunity as enrollment has become the convention; and adherence to convention is perhaps the cardinal rule for those wishing to affect public policy because it insures interpretability of results by policy-makers. In sum, equality in access means equal college-going rates, equality in choice means equal enrollment rates in more expensive, four-year and private institutions. Finally, equality in retention and completion means equal retention and completion rates.

Before proceeding, it should be acknowledged that in addition to student aid, numerous other variables act to affect enrollments. Money or the lack of it is not the major force acting on the attendance decision for many students. The impression should not be gained that student aid will solve national equality problems, even in higher education. Nevertheless, from the following pages, it does appear that student aid makes a contribution to this national priority.[3]

In making its assessments, this report proceeds as follows. For background purposes, the first section reviews trends in overall enrollments and in student costs and student aid appropriations. Because previous ERIC/Higher Education-AAHE research reports have considered enrollment and student aid trends in detail, only summaries are provided herein.[4] The third condition, costs of attendance, is discussed at somewhat greater length.

In the second and third sections of the report, focus is in turn on the enrollment trends by income, by race, and by sex. For each of these three variables, present and time series access (enrollment)

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[3] For a discussion of how all these factors affect the enrollment decision, see Jonathan D. Fife, *Applying the Goals of Student Financial Aid*, Chapter 3, 1975.

[4] For enrollment trends, see Larry L. Leslie and Howard F. Miller, Jr., *Higher Education and the Steady State*, 1974; and, for student aid trends, see Jonathan D. Fife, *Applying the Goals of Student Financial Aid*, 1975.

data are examined, as are the limited available retention and completion data. Then, enrollment rates by sector and level are considered in order to assess changes in opportunities related to college choice. In an effort to assess the possible relationships of the enrollment rate changes in student aid and to college costs, determinations are made of who receives the aid. Finally, where data are available, more direct assessment of the effects of student aid upon enrollments is made by examining the potency of aid in altering the college attendance decisions of aid recipients.

The fourth and final section of the report makes summary observations and conclusions. The summary reveals that:

- Low-income youth continue to be underrepresented in higher education overall, although during the past decade they have improved their position vis-á-vis other income groups.
- Middle-income enrollment rates are only slightly below average overall rates at present, but they have been declining sharply in recent years.
- High-income rates are above the average, although they have been declining moderately.

Concerning college choice, the trends for the low- and high-income groups are mixed; and for the middle-income group, declines are noted on each of two dimensions:

- The low-income group is increasing its share of private enrollments;
- The high-income group is increasing its share of university enrollment; and
- The middle-income group is losing ground in both regards.

Concerning retention and completion rates, all three target groups —the poor, minorities, and women—do not fare well, although trend data are lacking and, therefore, progress or change cannot be assessed.

The summary data by race are the most encouraging of those presented. Parity in college access and choice have nearly been achieved for all minority groups taken as a whole. In terms of subgroups, blacks have made access and choice gains of major proportions, but they continue to be somewhat underenrolled overall.

Women still compose a smaller percentage of higher education enrollments than men, but considerable gains have been noted during the past decade. In regard to college choice, by institutional sector, women are underenrolled in private institutions and in universities and are slightly overrepresented in four-year colleges. Only in universities has progress in institutional choice been noted for women.

In all three target groups, it would appear overall that student aid has played a major role in what clearly has been progress of major proportions. This conclusion is supported by the preponderant dissemination of student aid to these three groups, by their relatively low net costs of enrollment, and by their own reports of the instrumental role the aid has played. On the other hand, it appears that the most severe effects of rising costs have been experienced by middle-income youth, who qualify for little or no student aid.

Changes in Enrollments and Enrollment Conditions

The major purpose of this report is to assess how certain changing financial conditions, i.e., higher student costs and increasing amounts of student aid, are affecting the postsecondary enrollments of certain categories of youth. In this section, enrollment trends are examined in the aggregate, and changing overall student costs and student aid appropriations are reviewed. This is important background information because implications of subgroup trends are understood more clearly in relation to the changing size and nature of the whole. The next two chapters are the core of this report and contain the assessment of the effects of these changing conditions on the poor, minorities, and women.

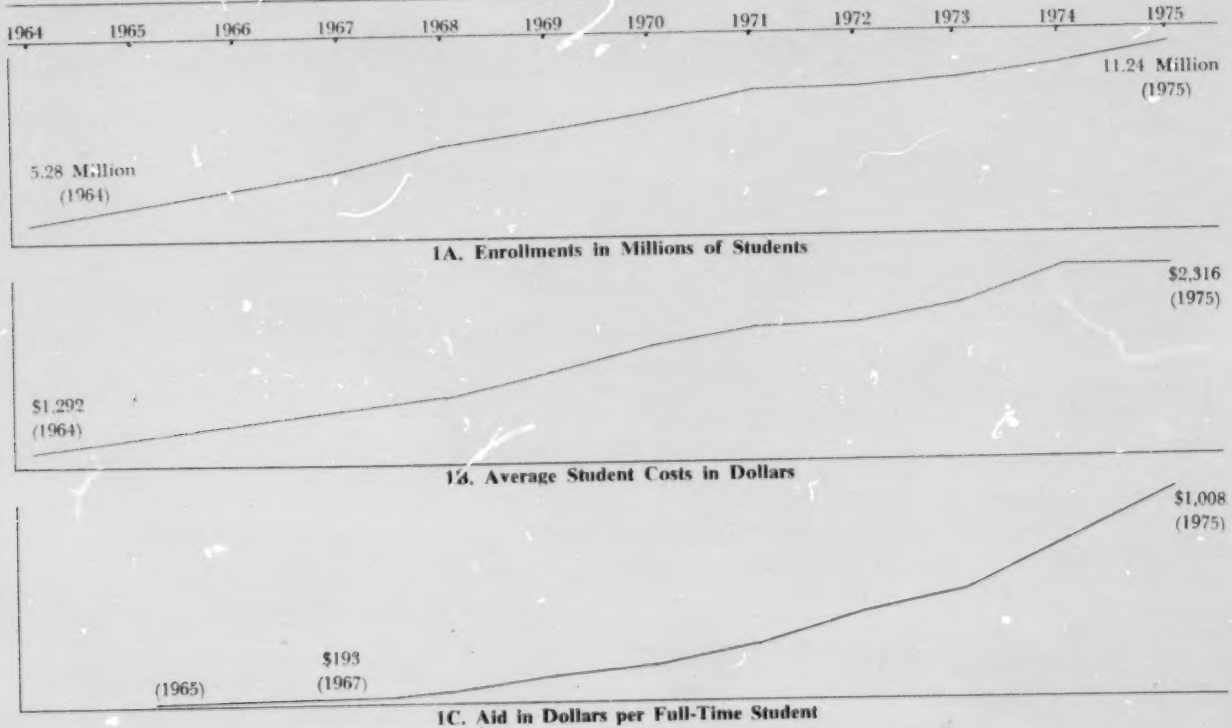
Before beginning the data presentation, certain inconsistencies in the data sources should be acknowledged because the validity of conclusions may be affected. First, the sources do not always provide data for precisely the same years. Second, the sources do not always employ consistent definitions. A "student" may be defined as a full-time student by one source, a full-time equivalent by another source, and simply a "head count" student by yet another source. Third, the sources may categorize data differently. For example, a variety of income and racial groupings are encountered. Finally, the sources occasionally quantify their data in different forms. For example, most sources list comprehensive access data by income and categorize it as higher education participation rates; however one source categorizes this data as enrollment shares or as proportions of the total enrollment.

Whenever possible, these inconsistencies have been overcome or at least taken into account. Data have been converted to constant dollars, merged into consistent categories, and adjusted to allow comparability. Also, they have been checked for consistency against other sources. What unfolds is a pattern of findings consistent in direction and, to only a slightly lesser extent, consistent in degree. The general direction of findings most certainly is valid, although care should be exercised in evaluating the specific values reported.

Trends in Overall Enrollments

An examination of changing overall enrollments provides a necessary perspective for viewing changing enrollments among the three

Figure 1. Enrollment, Cost, and Student Aid Growth, 1964-1975



1A. Enrollments in Millions of Students

1B. Average Student Costs in Dollars

1C. Aid in Dollars per Full-Time Student

Table 1. Summary of Enrollment in All Institutions of Higher Education, by Degree- and Non-degree Credit Status: United States, Fall 1964 to 1975 (Resident and Extension Opening Fall Enrollment —In Thousands)

Year (Fall) (1)	Total Degree-Credit and Nondegree Credit Enrollment (2)	Annual Percent Change in (2) (3)	Degree-Credit (4)	Annual Percent Change in (4) (5)	Nondegree-Credit (6)	Annual Percent Change in (6) (7)
1964	5,280		4,950		330	
1965	5,921	12.1	5,526	11.6	395	19.7
1966*	6,390	8.0	5,928	7.3	462	17.0
1967*	6,912	8.2	6,406	8.1	505	9.3
1968	7,513	8.7	6,928	8.1	585	15.8
1969	8,005	6.5	7,484	8.0	521	–10.9
1970	8,581	7.2	7,920	5.8	661	26.9
1971	8,949	4.3	8,116	2.5	833	26.0
1972	9,215	3.0	8,265	1.8	950	14.0
1973	9,602	4.2	8,520	3.1	1,082	13.9
1974	10,224	6.5	9,023	5.9	1,200	10.9
1975	11,240	9.9				

*The breakdown between degree-credit and nondegree-credit enrollment in 1966 and 1967 is estimated.

Note: Data are for 50 states and the District of Columbia for all years. Because of rounding, details may not add to totals.
Final revised figures for fall 1973 opening enrollment in institutions of higher education are slightly different from those shown in the table.

Sources: Enrollment data are derived from the following: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, publications: (1) *Opening (Fall) Enrollment in Higher Education*, annually, 1964 through 1968, 1971 through 1975; (2) *Fall Enrollment in Higher Education, Supplementary Information*, 1969 and 1970; and (3) *Resident and Extension Enrollment in Institutions of Higher Education*, fall 1966 (unpublished).

Table 2. Primary Families with Dependent Members 18 to 24 Years Old Enrolled Full Time in College, October 1967 to October 1974 (Percentage of All Families Reporting Income)

1967	1968	1969	1970	1971	1972	1973	1974	1975
39.1	40.1	42.0	39.8	38.4	37.8	36.2	34.2	37.1

Note: A dependent family member is a relative of the head of household, excluding the head's wife or any other relative who is married with a spouse present. Such persons are generally the sons and daughters of the household head.

Source: *Current Population Reports, School Enrollment—Social and Economic Characteristics of Students* (Washington: U.S. Department of Commerce, Bureau of the Census), Series P-20.

subgroups of primary concern. For example, data showing the growing portion of the undergraduate student body that is poor assumes additional meaning if it is known that the overall size of the total student body has grown larger and by how much.

Absolute Numbers—In absolute numbers, postsecondary enrollment growth since 1964 generally has been constant (see Table 1 and Figure 1), although the rate of growth has followed a somewhat erratic pattern (see Table 1 and Figure A-1 in the Appendix).[5] The annual enrollment growth in the fall of 1965 was about 650,000 students, or about 12.1 percent (column 3 of Table 1). In the subsequent seven years, the growth rate declined to 3.0 percent annually. In 1973, the rate of growth began to increase again, and reached a peak of 9.9 percent, at least temporarily, in 1975. (Fall 1976 enrollments are only slightly higher than 1975 levels.)

Propensities for Higher Education—A more useful way of viewing enrollment data for policy purposes is to consider propensities for higher education i.e., the higher education participation rate. This approach takes into account the changing size of the population base and allows a more accurate appraisal of the effects of policy changes. The Census Bureau, which bases its analysis upon all families with dependent members 18 to 24 years old, reports that between 1969 and 1975, participation rates declined steadily (see Table 2). In 1969, 42.0 percent of these families reported members enrolled full-time in college, compared to 34.2 percent in 1974.[6] These data illustrate the misimpression that can be gained from viewing trends in absolute enrollments, such as those seen in Table 1.[7]

Trends in the Costs of Attendance

As indicated in the *Overview*, student aid may be conceptualized as a reduction in the student's net price; and a reduced net price

[5] When enrollments are broken down into degree-credit and nondegree-credit categories (Table 1, columns 4 and 6), a similar pattern unfolds, although in the latter case some anomalies are noted. Like the pattern for total enrollments, the growth rate for degree-credit students declined steadily until 1972, whereupon the trend was reversed. However, ignoring the deviant case of 1969, for nondegree-credit enrollments, the growth rate apparently has not yet "bottomed out." It is also worth noting that the rate of nondegree-credit enrollment growth has remained much higher than the rate of degree-credit growth.

[6] The reversal in the 1975 participation rate appears to be anomalous; the 1976 rate probably will decline quite sharply.

[7] Another way to view the "propensity for higher education" is seen in Table A-1, which shows the annual relationship between high school graduates and first-time degree-credit enrollments. (The prefix A indicates location in the Appendix.) Table A-1 shows that this relationship was fairly constant at about 52 to 54 percent through 1967 and has fluctuated around 60 percent since that time.

should act to increase enrollments. If no other component of net price were to vary as student aid were increased, a straightforward assessment of the effects of increased aid would be possible. However, a number of costs to students have increased along with aid and it is important to take these increases into account.

Two agencies provide data on student costs of college attendance. In academic year 1970-71, the College Scholarship Service (CSS) began publishing institutionally reported costs of attendance by institution and across several analytically useful categories (see Table A-2). Data from the National Center for Education Statistics (NCES) are published in somewhat less useful categories, but begin in 1964 and are available in both constant and current dollars (see Tables 3 and A-3 and Figure 1, part B). Visual checks of the CSS and NCES tables show that if proper adjustments are made, the two data sources are generally consistent. (The NCES includes only tuition and room-and-board charges, while CSS includes other attendance-related expenses.)

Referring to the NCES data in Table 3 it can be seen that both average total institutional charges and average tuition and fee charges have increased steadily since 1964-65. During this period, average total charges per student in the public and nonpublic sectors have increased $1,013 and $2,174, or 107 and 114 percent, respectively (see the bottom of page 2 of the Table). Tuition charges have increased by $356 and $1,446, or 145 and 133 percent, in the public and private sectors, respectively. When conversions are made to constant dollars, the increases are, of course, more modest, although it is clear that student charges since 1964-65 have risen more rapidly than inflation as measured by the Consumer Price Index (see Table A-3).

Trends in Student Aid[8]

The tabulation of public appropriations for student aid began only a little more than a decade ago. That first year, fiscal 1965, total student aid appropriations by federal and state governments were less than $137 million. Since that time, the growth in student aid appropriations has been of major proportions (see Table 4 and Figure 1, part C). In fiscal 1976, the appropriation was approximately $7.542 billion. Of this amount, about $3,598 billion was awarded by federal and state governments, all or in part on the basis of student need. Institutions added another $1.046 billion from their own re-

[8] For a more detailed discussion, see Jonathan D. Fife, *Applying the Goals of Student Financial Aid*, 1975, Chapter 3.

Table 3. Estimated Average Charges (Current Dollars) Per Full-Time Undergraduate Resident Degree-Credit Student in Institutions of Higher Education, by Institutional Type and Control 1964-65 to 1976-77 [Charges are for the Academic Year and in Current Unadjusted Dollars]

Year and Control	Total Tuition, Board, and Room					Tuition and Required Fees				
	All	Annual Percent Change	University	Other Four-Year	Two-Year	All	Annual Percent Change	University	Other Four-Year	Two-Year
1964-65										
Public	950		$1,061	$ 867	$ 638	243		$ 298	$ 224	$ 99
Nonpublic	1,907		2,202	1,810	1,455	1,088		1,297	1,025	702
1965-66										
Public	983	3.5	1,105	902	670	257	5.8	327	230	109
Nonpublic	2,005	5.1	2,316	1,897	1,557	1,154	6.1	1,369	1,086	768
1966-67										
Public	1,026	4.4	1,171	947	710	275	7.0	360	259	121
Nonpublic	2,124	5.9	2,456	2,007	1,679	1,233	6.8	1,456	1,162	845
1967-68										
Public	1,064	3.7	1,199	997	788	283	2.9	366	268	143
Nonpublic	2,204	9.4	2,545	2,104	1,763	1,297	5.2	1,534	1,237	893
1968-69										
Public	1,117	5.0	1,245	1,063	883	295	4.2	377	281	170
Nonpublic	2,321	5.3	2,673	2,237	1,876	1,383	6.6	1,638	1,335	996
1969-70										
Public	1,205	7.9	1,362	1,137	952	324	9.8	427	307	179
Nonpublic	2,533	9.1	2,919	2,420	1,993	1,534	10.9	1,809	1,469	1,034
1970-71										
Public	1,288	6.9	1,478	1,209	1,017	352	8.6	478	333	1[illegible]
Nonpublic	2,740	8.2	3,163	2,598	2,104	1,685	9.8	1,981	1,603	1,1[illegible]
1971-72										
Public	1,357	5.4	1,579	1,263	1,073	376	6.8	529	354	192
Nonpublic	2,917	6.5	3,375	2,748	2,186	1,820	8.0	2,133	1,721	1,172

1972-73										
Public	1,406	3.6	1,598	1,341	1,128	400	6.4	536	392	213
Nonpublic	2,993†	2.6	3,460	2,820	2,248	1,869	2.7	2,199	1,775	1,213
1973-74										
Public	1,524	8.4	1,691	1,492	1,242	445†	11.3	571	453	246†
Nonpublic	3,184	6.4	3,715	3,030	2,422	2,009	7.5	2,373	1,917	1,315
1974-75										
Public	$1,708	12.1	$1,903	$1,682	$1,420	$ 503	13.0	$ 653	$ 515	$ 285
Nonpublic	3,592	12.8	4,193	3,419	2,724	2,290	14.0	2,701	2,188	1,496
1975-76										
Public	1,818†	6.4				533†	6.0	690	550	301
Nonpublic	3,827†	6.5				2,445†	6.8	2,876	2,337	1,652
1976-77										
All	2,456					1,048				
Public	1,963†	8.0				596†	11.8	760	615	387
Nonpublic	4,081†	6.6				2,534†	3.6	2,979	2,421	1,740
Change, 1964-65 to 1976-77										
Public	1,013					356		462	391	288
	(107)*					(145)*		(155)*	(175)*	(291)*
Nonpublic	2,174					1,446		1,682	1,398	1,038
	(114)*					(133)*		(130)*	(137)*	(148)*

†Estimated.

Source: Computed from Department of Health, Education, and Welfare, National Center for Education Statistics, *Projections of Educational Statistics* to 1984-85, 1975 edition, and from Table A-2.

*Percentage.

Table 4. Public Appropriations for Student Aid in Millions of Current Dollars: Fiscal Years 1965-1976

Year	Federal Veteran's Benefits	Social Security Benefits	Other Federal Student Aid Programs[1]	State Student Aid Programs	Total	Annual Growth Total
1965	9		56	72	137	137
1966		207	167	96†	470	333
1967	216	256	292	124†	888	418
1968	335	305	321	159†	1,120	232
1969	432	366	341	200	1,339	219
1970	665	401	392	236	1,694	355
1971	1,117	455	490	269	2,331	637
1972	1,482	521	860	316	3,179	848
1973	2,016	638	895	364	3,913	734
1974	2,452	717	1,256•	441	4,836	923
1975	2,642	856	2,091•	510	6,099	1,263
1976	3,075	869†	2,955	645	7,542	1,443

1 Includes BEOGs, SEOGs, CWS, SSIGs, Interest on Insured Loans, and defaults on Insured Loans. (Supplemental appropriations included.)

•$171 million appropriated for BEOGs in 1974 spent in 1975.

†Estimated.

Note: Most student aid funds are forward funded to the next academic year.

Sources: All Federal data, and state data for 1965 from U.S. National Center for Education Statistics: *Financial Statistics of Institutions for Higher Education: Current Funds Revenues and Expenditures*, Washington, D.C., annual. State data for 1970-75 from Joseph Boyd, *Annual Report of State Scholarship and Grant Programs*, Illinois State Scholarship Commission, annual. Post-1975 data derived from *Summary Analysis of FY '77 Budget*.

sources (Hershberger et al. 1975, p. 78). The remainder—veterans' and Social Security survivor benefits—were not awarded on a need basis. In fiscal 1977, the largest of these, veterans' benefits, was on the decline (*The Chronicle of Higher Education*, October 18, 1976).

Summary

This section has summarized overall trends in enrollments, in student costs of attendance, and in student aid appropriations (see Figure 1). It has shown that: the overall rate of enrollment growth has slowed since the peak years of the early to mid-1960s, although the rate did spurt during the 1973 through 1975 academic years; among primary families, the rate of college going declined from 1969 to 1975; and the costs of college attendance have risen sharply, exceeding increases in the annual rate of inflation. Finally, the emergence of student aid programs, particularly those based on need, have been noted. Only GI benefits are now declining.

The next two sections address the major purpose of this report; namely, What have been the effects of increasing costs and student aid appropriations on enrollments of youth from low-income families, of racial minorities, and of women? The implication is that recent changes in costs and student aid have altered the enrollment decisions of all three groups.

Changing Enrollments by Family Income

Much of the current debate surrounding financing trends in postsecondary education involves how various income groups have been faring under the changing conditions of the 1970s. According to demand theory, if the large need-based student aid programs have been achieving their goals of promoting equality in access and choice, it would be expected, *ceteris paribus*, that low-income enrollments would be rising, both overall and at the higher-priced, more selective, four-year and private institutions.[9] However, the increasing costs of college attendance will have absorbed some of the subsidies and may have attenuated the enrollment effects of these aid programs for low-income persons. That is, the rising gross costs of attendance will have consumed some of the subsidies, thus keeping net costs up and perhaps enrollments down. Further, it might be expected that the rising costs have acted to reduce enrollments among those who neither qualify as readily for need-based aid programs nor have access to alternative resources—i.e., college-age youth of middle-income families.[10] The middle-income nonrecipient receives no public "offset" for his higher gross costs and his parent's resources may be quite limited. Consideration of the income-enrollment relationship is the purpose of this section.

The two major sources of time series enrollment data used in this section are the American Council on Education's (ACE) Annual Freshman Surveys and the Census Bureau's Series, "Characteristics of American Youth." The ACE annually conducts a broad survey of a large sample of entering college freshmen. Although the validity

9 As indicated earlier, not all aid programs are need based. Unfortunately, it is impossible to separate the effects of the need-based programs when viewing changes in national enrollment data.

10 Defining this term is a troublesome matter. No commonly accepted definition exists; yet, much is heard about the so-called "plight of the middle class." Elsewhere (Leslie and Johnson 1974, p. 122), we defined middle income as between $7,500 and $15,000 in annual earnings. Today the range would be somewhat higher. In this report, the available data places constraints on the selection of an appropriate definition and the consistency with which this definition is applied. Prior to 1974, data seldom were disaggregated above $15,000 annual income. Thus, it was necessary in composing time series tables to accept, in most cases, $15,000 as the upper limit of the middle-income category; $10,000 was accepted as the lower limit. This range of $10,000 to $15,000 is utilized where possible, but occasionally the categories employed by data sources were inconsistent and could not be converted.

of the survey's family income data has been questioned because the data are based on student estimates. this data source is one of few to combine a large number of important variables.[11] Further, the ACE data are useful because their specificity to the annual freshman class allows the most direct assessment of the effects of annual changes in costs and in student aid expenditures. It is suspected that upperclassmen, once enrolled, are less price-responsive and that focusing on freshmen yields a more sensitive assessment of the effects of annual cost and aid changes. Also, many of the aid programs are relatively new and have not been available equally to upperclassmen, at least in the early years of these programs.

A major strength of the Census Bureau surveys is that they apply to many more students, being based on all full-time students enrolled. Also, interpretation of Census data is facilitated by the provision of income in comparable, constant dollars. Regrettably, the Census Bureau's publishing time lag is considerable, and its most recent income categories are not comparable to those of earlier time periods.

Enrollments by Family Income: Access to College

The Census data in Table 5 show that enrollment rates for most income categories have declined over the past nine years, with peak rates having been reached in 1969, and a major upturn having occurred in 1975.[12] (Figure 2 shows the temporal relationship of the rate changes to increases in costs and in student aid.) The largest enrollment *rate* decrease (from 39.4 to 34.1 percent or 5.3 percent) has occurred in the $10,000-to-$15,000-income bracket.[13] This rep-

[11] The ACE income data have been validated by the Census Bureau. The experience of the Bureau with its own data is that personal income estimates err on the conservative side.

[12] 1975 appears to be a deviant case; enrollments unexpectedly surged 10 percent, compared to a projected increase of about 3 percent. In 1976, enrollments were essentially unchanged, which suggests that larger social conditions, e.g., high unemployment among youth, may have accounted for the unexpected reversal in enrollment rates in 1975.

[13] Larry Suter (1976) of the Census Bureau appears to have shown that the Bureau's enrollment rates of the late 1960s were abnormally high and that they are now returning to their normal, historic levels. He argues that the (Bureau) rates were high around 1970: (a) because young men attended college to avoid the draft, and (b) because the Bureau's data exclude military personnel, who tend to come from groups having low propensities for higher education. If Suter's observations are accurate, the larger rate decline among middle-income students since 1969-70 would be explained by larger than average middle-income representation among student draft avoiders and smaller representation among military personnel. This appears plausible until it is observed that high-income groups, for whom this effect should be even more pronounced, have not experienced even comparable enrollment declines.

16

Figure 2. College Participation Rates by Family Income, Compared with Costs per Student and Aid per Student: 1967-1975

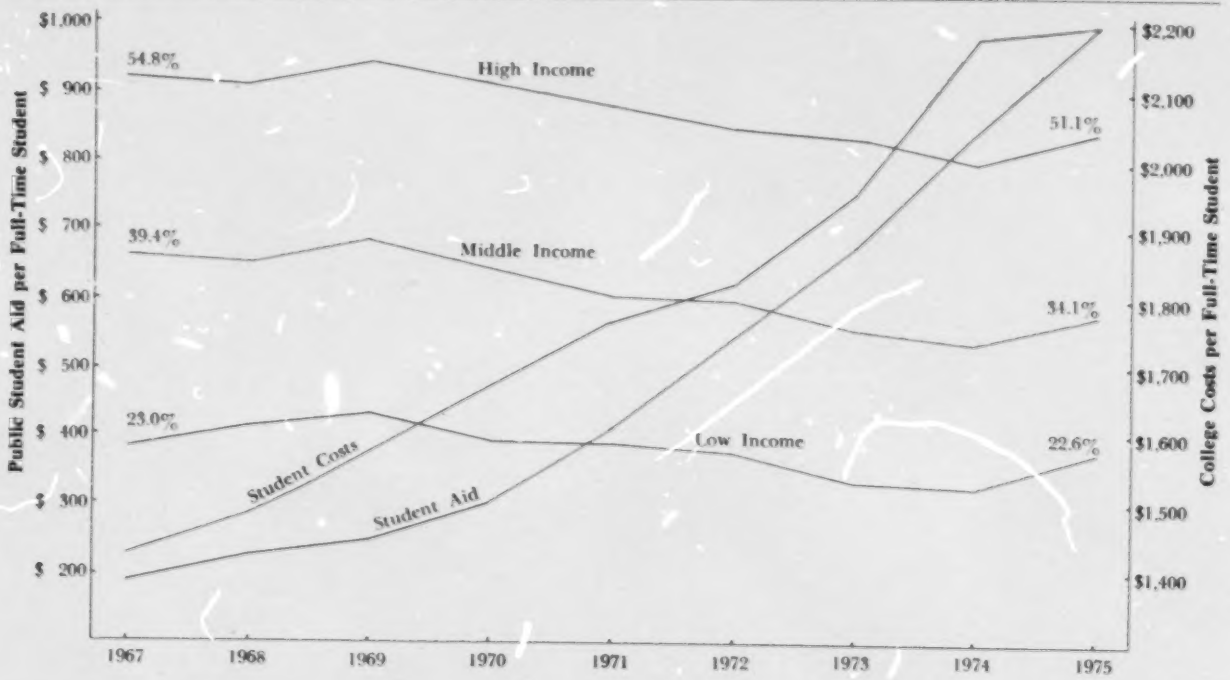


Table 5. Primary Families with Dependent Members 18 to 24 Years Old Enrolled Full-Time in College, by Family Income[1]: October 1967 to October 1975 (Percentage of All Families Reporting Incomes)

Income Categories	1967	1968	1969	1970	1971	1972	1973	1974	1975
Total Reporting Income	39.1	40.1	42.0	39.8	38.4	37.8	36.2	34.2	37.1
Under $5,000	13.9	17.0	18.2	15.8	16.7	16.7	15.0	14.6	17.2
$5,000-$10,000	27.1	28.3	29.2	27.2	27.0	26.5	23.7	23.2	26.7
$10,000-$15,000	39.4	39.2	40.9	38.9	36.1	35.9	33.4	32.1	34.1
$15,000-$20,000								38.7	44.8
$20,000-$25,000								45.6	46.4
Over $25,000								58.9	63.6
Under $10,000	23.0	24.6	25.5	23.1	23.0	22.4	20.1	19.5	22.6
$10,000-$15,000	39.4	39.2	40.9	38.9	36.1	35.9	33.4	32.1	34.1
Over $15,000	54.8	54.6	56.3	54.4	52.6	51.1	49.7	47.5	51.1

Enrollment Rates Adjusted for High School Dropouts and College Graduates, Persons 18 to 24 Years Old, by Family Income: 1972[2] (Percent)

<$3,000	$3-4999	$5-7499	$7500-9999	$10-14,999	>$15,000	Overall
25.3	24.8	21.3	24.8	34.9	55.7	34.1

[1] Income in constant 1975 dollars.

[2] 1973 dollars.

Note: A dependent family member is a relative of the head of household, excluding the head's wife or any other relative who is married with a spouse present. Such persons are generally the sons and daughters of the household head.

Source: *Current Population Surveys*, U.S. Bureau of the Census.

resents a percentage decline in middle-income enrollments of almost 11 percent, and an 18.5 percent decline from 1969 to 1974. In the lowest income bracket (under $5,000), enrollments rose by 3.3 percent during the nine years; and for those earning less than $10,000, enrollments declined by just 0.4 percent. Over $15,000, rates decreased; but the form of available data does not allow adequate disaggregation.

Although these rate changes favor the low-income group, as Table 5 shows, most recent enrollment rates continue to vary directly with income. In 1975, only about 1 in 6 of the lowest-income families with dependents 18 to 24 years old had at least one offspring in full-time college attendance, whereas the comparative figures were about 1 in 3 for $10,000-to-$15,000-income families, and 1 in 2 for families earning $15,000 or more. It is important to note, however, that there is no "overenrollment" among groups earning between $10,000 and $15,000. Only above $15,000 are attendance rates higher than the rate for all families considered collectively.

Further, the disparity between enrollment rates of the lowest- and highest-income groups is even greater if the percentage of these families who have more than one dependent in college is considered. Whereas 1.5 percent of the lowest-income families have more than one dependent in full-time college attendance, 3.0 percent of the $10,000-to-$15,000-income families and 14.3 percent of the over $25,000-income families have more than one such dependent.

On the other hand, if the enrollment base is adjusted for the noncollege-eligible, these disparities are reduced markedly for two of the groups. When high school dropouts are eliminated from the enrollment base, the higher dropout rates for low-income groups result in statistically higher participation rates for them. A lesser but similar effect for higher-income groups is noted if those youth who have already completed college are eliminated from the calculation base. These effects are noted for one year (1972) in the lower portion of Table 5, which is based on family *members* rather than "families with dependent members." The adjustments reduce the enrollment disparities considerably; nevertheless, again, only the highest-income group shows overrepresentation while three groups, including the two lowest-income categories, are essentially even at about a 25 percent enrollment rate. The $5,000-to-$7,500-income group shows the lowest rate after the adjustment (21.3 percent), while the $10,000-to-$15,000 group is approximately at the total group average.

Although the Census data are the most easily interpreted, passing reference should be made to the ACE freshmen data because another

perspective of recent enrollment trends is gained. When each income group's *share* of freshmen enrollments is considered over time, it is observed that the lower two quartiles have increased their shares markedly, while the upper two quartiles have decreased their shares (see Figure A-2 in the Appendix). Nevertheless, again the lowest-income group is seen to be underrepresented to a major degree. Interestingly, the second and third quartiles, which contain the middle-income group, are neither overrepresented nor underrepresented.

The ultimate question, however, is what portion of these enrollment changes are related to rising costs and growing student aid appropriations? In an effort to quantify the relationships among the variables, a correlation and regression analysis was performed.

The zero-order relationships among the variables are noteworthy (see Appendix, Table A-4). These simple relationships between changing enrollment rates and changing student aid, and changing enrollment rates and changing costs per student are quite strong and are negative for all three income groups (from –.69 to –.90). They are strongest for the middle-income group, being –.90 for both enrollment rates and aid, and enrollment rates and costs. That is, over the past nine years, the decline in enrollment rates for the middle-income group has been very strongly associated with the increases in aid and costs. (Middle-income students receive little aid.) The other two groups appear to have been affected adversely, too, by the combination of these conditions, but less so than the middle-income group.

The multiple regression analysis shows that aid and costs, when coupled for control purposes with changing unemployment rates, explains from 63 to 87 percent of the total variation in enrollment rates for the three income groups (Table A-5). Holding aid constant, for the low-income group, a $100 cost increase[14] is associated with a 0.66 percent enrollment *rate* decline; for the middle- and high-income groups, the comparable *rate* decreases are 0.74 and 0.81 percent, respectively.[15] The low-income group demonstrates less sensitivity to higher costs probably because of the aid they receive. But, as seen above, in most cases the aid appears insufficient to offset the higher costs: for the low-income group, a $100 aid increase is associated with a .18 percent enrollment rate decrease. This compares

[14] Per student for *all* students.

[15] Since the low-income participation rate is lower, a 0.66 percent *rate* decline is a larger percentage decline than are the rate declines for the middle- and high-income groups.

favorably, however, with a respective .49 and .46 percent decrease for the middle- and high-income groups, who are less eligible for aid.

In sum, during the past decade, access for low-income youth has improved at least in a relative sense: the rate for the lowest-income group (<$5,000) has increased and the rate for the <$10,000 group has declined slightly. However, this occurred at a time when high- and especially middle-income rates were dropping sharply. The result is that low-income youth have increased their *share* of higher education enrollments, although they continue to be underrepresented in postsecondary institutions in relation to higher income groups. Participation rates for middle-income students are approximately at average levels and have been declining sharply.

Enrollment Trends by Family Income: College Choice

The conventional measures of college choice, the second major goal of need-based student aid programs, are attendance at generally higher-priced and more selective four-year, as opposed to two-year institutions, and private, as opposed to public, institutions.[16] The view is that low-income students should not be relegated to attendance at less costly and less prestigious institutions.

Improvement in college choice can be assessed for these students by examining their time-series enrollment patterns by sector and level. A more direct approach is to examine the attendance patterns of aid recipients.

Attendance Rates by Sector and Level—When converted to constant dollars, the ACE Freshman time-series data provide a basis for judging change in college choice by income levels. Concerning level of enrollment, it appears that college choice has not been well-served for low- and middle-income freshmen during the past decade. The last column of Table 6 shows that the median family income of all freshmen has varied little since 1966, while the median income for university freshmen has increased by over $2,300 (from $16,977 to $19,366), and that of two-year college freshmen has decreased by about $1,100. These data suggest that the changing cost picture has acted to increase income barriers to attendance at higher-level institutions.[17] Two-year college students are becoming slightly poorer, and university students are becoming richer.

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16 Many students, of course, will "choose" to attend two-year and public institutions. This analysis herein is limited to the conventional measures of college choice.

17 This assumes, of course, that lower-income students *desire* to attend higher-level institutions.

Table 6. Freshman Enrollments by Family Incomes, by Median Income, and by Level: 1966-1975 (Percentage Distributions, 1975 Constant Dollars)

Level	Total	Less than $10,000	$10,000-$15,000	Over $15,000	Median Income in Constant Dollars
1966					$15,678
Two-Year	100.1	23.4	29.3	47.3	14,514
Four-Year	100.0	21.0	26.5	52.5	15,550
University	100.0	15.4	25.6	59.0	16,977
1967					$15,892
Two-Year	100.0	25.1	31.2	43.7	13,914
Four-Year	100.0	19.4	25.6	55.0	16,157
University	100.0	13.5	23.0	63.5	17,806
1968					$15,619
Two-Year	100.0	26.3	30.1	43.6	13,812
Four-Year	100.1	21.5	25.4	53.1	15,656
University	100.0	15.0	22.7	62.4	17,370
1969					$15,527
Two-Year	100.1	26.2	29.2	44.6	14,046
Four-Year	100.0	20.3	25.5	54.2	15,694
University	100.0	14.7	22.4	62.9	17,500
1970					$16,093
Two-Year	100.0	28.9	26.7	44.4	14,069
Four-Year	100.0	18.9	24.1	57.1	16,407
University	99.9	12.0	19.7	68.3	18,965
1971					$16,020
Two-Year	99.9	24.5	28.6	46.9	14,476
Four-Year	99.9	19.5	23.6	56.9	16,548
University	100.0	12.8	21.8	65.3	18,219
1972					$16,182
Two-Year	100.1	28.8	26.3	44.9	14,086
Four-Year	100.0	19.8	22.2	58.0	16,772
University	100.0	12.2	20.1	67.7	19,141
1973					$16,730
Two-Year	100.2	25.1	26.0	48.9	14,780
Four-Year	99.9	17.6	21.1	61.3	17,396
University	100.0	10.3	18.3	71.4	20,259
1974					$15,599
Two-Year	100.0	26.0	29.1	44.9	14,105
Four-Year	100.0	20.9	24.4	54.7	16,101
University	100.0	14.0	23.1	62.9	18,122
1975					$15,389
Two-Year	99.9	29.3	28.8	41.9	13,375
Four-Year	99.9	22.2	24.5	53.3	15,704
University	99.9	12.8	21.0	66.2	19,336

Source: ACE Annual Freshman Surveys.

In 1966, low-income students (<$10,000) constituted 23.4 percent of two-year college enrollments; in 1975, they constituted 29.3 percent. Although little shift was noted at the level of four-year institutions, a decline had occurred in universities, where the low-income

share had dropped from 15.4 percent to 12.8 percent. (Recall from Figure A-2 that the low-income share of total enrollments had risen.)

The general pattern for middle-income persons shows comparable declines. The $10,000-to-$15,000-income group has demonstrated a modest overall enrollment decline, a modest two-year enrollment decline, a little larger decline in four-year enrollments, and a still larger decline at the university level.

Upper-income individuals, on the other hand, were "better off" in 1975 than in 1966. They composed a larger portion of university and a smaller portion of two-year enrollments than they had in 1966. Little change was noted at the four-year level.

When the collegiate sector is considered, however, the college choice trends for low-income youth are more encouraging (see Table 7). First, while overall median family incomes have varied only

Table 7. Freshman Enrollments by Family Income, by Median Income, and by Sector: 1968-1975 (Percentage Distributions, 1975 Constant Dollars)

Year	Total	Less than $10,000	$10,000 to $15,000	Over $15,000	Median Income in Constant Dollars
1968					$15,619
Public	100.0	22.1	26.8	51.1	15,188
Private	100.0	15.5	21.2	63.3	18,168
1969					$15,527
Public	100.0	23.0	27.1	49.9	15,000
Private	100.0	16.5	22.0	61.5	18,044
1970		(Not Available)			
1971					$16,020
Public	100.0	25.2	24.7	50.1	15,028
Private	100.0	18.8	20.5	60.7	18,137
1972					$16,182
Public	100.1	25.1	22.8	52.2	15,573
Private	99.9	19.0	18.8	62.1	18,786
1973					$16,730
Public	100.0	25.8	21.6	52.6	15,625
Private	100.0	20.1	17.7	62.2	18,849
1974					$15,599
Public	100.0	27.7	22.0	50.3	15,087
Private	100.0	22.0	17.9	60.1	18,000
1975					$15,389
Public	100.0	27.6	22.7	49.7	14,918
Private	100.0	22.0	18.1	59.9	17,585

*Does not include two-year enrollments.

Source: ACE Annual Freshman Surveys.

Note: Totals may not add to 100 due to rounding.

slightly in constant dollars since 1968, in the private sector median incomes have declined by almost $600 (see the last column). Further, the low-income share of private college enrollments has increased from 15.5 to 22.0 percent. The middle-income share, however, has declined on this measure of college choice as well as the first measure —dropping from 21.2 to 18.1 percent in the eight years. The high-income share of private college enrollments also declined during the period.[18]

Table 8 combines both measures of college choice and shows the current, comparative enrollments. Low-income students are shown to be particularly underrepresented in universities, both public and private; middle-income students are similarly underrepresented, albeit by smaller margins.

In sum, it appears that college choice, as measured by changes in enrollments by level, has been reduced for low- and middle-income individuals during the past decade, especially in universities. Considering enrollment changes by sector, improvement has been noted for the low- though not for the middle-income group. In absolute

Table 8. Freshman Enrollment Shares by Institutional Level and Sector and by Family Income: Fall 1975 (percentage)

Sector and Level	Less than $10,000	$10-15,000	Over $15,000	All
Public				
Two-Year	28.8	29.1	42.1	100.0
Four-Year	22.9	25.8	51.3	100.0
University	13.5	22.4	64.1	100.0
Private				
Two-Year	35.2	25.9	39.1	100.2
Four-Year†	21.1	23.3	55.6	100.0
University	10.2	15.8	74.2	100.2
Overall				
Two-Year	29.3	28.8	41.9	100.0
Four-Year	22.2	24.5	53.3	100.0
University	12.8	21.0	66.2	100.0
All	22.7	25.4	51.9	100.0

†Estimated.

Source: *The American Freshman: National Norms for Fall 1975*, ACE.

Note: Totals may not add to 100 due to rounding.

18 Recent census data for all students, freshmen through seniors, confirm this pattern (see Table A-6).

terms, in 1975 the low-income share of private enrollments was almost equal to the low-income share of all enrollments.

Attendance Patterns of Aid Recipients—A more direct way of assessing the college choice issue and the effects of aid is to examine the enrollment patterns of aid recipients by sector and level. Tables 9 and A-7 through A-9 report on the findings of several major studies that considered these patterns. These tables reveal that student aid recipients tend to be overrepresented among student bodies of private and other than two-year institutions, when compared to appropriate norm groups.

Table 9 from the National Longitudinal Study (NLS) shows that 1972-73 recipients of aid from any source were somewhat less likely (23.1 percent) than were all full-time students (27.7 percent) to attend public two-year colleges and were somewhat more likely (26.8 percent versus 21.7 percent) to attend private four-year institutions. The recipients also received larger subsidies if they attended the higher-priced institutions. When only students receiving federal aid are considered, the sector and level enrollment disparities with the norm group (total full-time students) are even greater. Moreover, federal recipients attending higher-priced institutions also received the largest subsidies. Because federal student aid is the most heavily need-based, the importance of need-based programs in the promotion of college choice is suggested.

The findings in Table A-7, from a Stanford Research Institute

Table 9. Distribution of 1972-73 Full-Time Freshman Students, Student Financial Aid Recipients, and Average Amount of Student Aid in Dollars

Institutional Type	Distribution (percentage)			Average Aid Amounts	
	Total Full-Time Students	From Any Source	Federal	From Any Source	Federal
Public Four-Year	43.3	42.7	41.6	960	921
Public Two-Year	27.7	23.1	17.2	636	733
Private Four-Year	21.7	26.8	33.7	1,703	1,400
Private Two-Year	2.3	2.2	2.2	1,007	876
Vocational	1.7	1.2	0.7	672	654
Other/Proprietary	3.3	3.9	4.5	1,664	1,639
	100.0	100.0	100.0		

Source: Base Year and First Follow-up Surveys of the National Longitudinal Study for the High School Class of 1972 (NCES 1975).

(SRI) study, are generally consistent with NLS data. In all five tabled categories, a larger share of federal student aid appropriations was disbursed in the private sector than was represented by the private share of overall enrollments, although the patterns held in only three of five cases when considered by enrollment level. The understandable, though striking, disparity by enrollment level was in the case of the distribution of BEOGs between private two-year and four-year institutions: BEOGs were available only to freshmen in the academic year considered.

Finally, state data from the College Student Grant Study (Leslie and Fife, 1974) follow a similar pattern. For example, in five of the six state student aid programs, recipients were more likely than norm-group students (state first-time, full-time degree credit enrollments) to attend private institutions, and generally by wide margins (e.g., 41.7 percent versus 11.4 percent in California) (Table A-8). By level, the recipient attendance patterns were in the expected direction in 15 of 18 cases; i.e., recipients were more likely to attend universities and four- or five-year colleges and were less likely to attend two-year colleges than were the norm group students (Table A-9). Again, the magnitude of the differences generally was considerable.

The Cost-Aid-Family-Income Relationships

Thus far, overall enrollment patterns of the past decade have been examined by family income, and the enrollment patterns of aid recipients have been noted. Regression results have suggested what impact aid and higher costs may have had on enrollments by income level. However, direct connections between the award of aid and the enrollment patterns of the various income groups cannot be made until the distribution of aid and costs by income level are ascertained. This is the next step in the analysis.

Net Costs—The most efficient way to consider this issue is to combine arithmetically the college costs of students from the various income levels with the amount of aid they receive. Subtracting the amount of aid from total costs yields the student's "net costs." Stated another way, net cost is the sum the student must provide through his own means after all subsidies have been expended.

Table 10 derives student net costs overall and for three income levels. Total "grants" plus family contributions comprise the "subsidies" to the student, who must make up the difference by work, borrowing, drawing upon savings, or other financing. It is seen that the portion the student must "make up"—i.e., the student's net cost—is greatest for the middle-income group and is least for students

from high-income families.[19] On the average, middle-income students must provide for themselves or find other sources for about 41.6 percent of their college expenses, compared to 32.2 percent for the low-income group and 29.6 percent for the high-income group. Part-time

Table 10. Percentage of Total College Costs Paid from Various Sources, by Income Level

Source	Low (≤ $8,000)	Middle ($8,000-19,999)	High ($20,000 or more)	All Students
BEOG	27.0	7.3	1.5	8.3
SEOG	3.2	1.1	0.2	1.1
State Scholarship	5.9	4.7	1.4	3.7
Local, Private Scholarship	4.0	4.5	2.6	3.8
Student's GI Benefits	1.9	1.0	0.4	0.9
Parents' GI Benefits	1.0	0.6	0.3	0.5
SS Dependents' Benefits	5.4	1.8	0.7	1.9
Total Grants	48.4	21.0	7.1	20.2
Parents or Family	18.6	36.8	62.9	43.1
Spouse	0.7	0.4	0.3	0.4
Total Family Assistance	19.3	37.2	63.2	43.5
Total Grants and Family Assistance	67.7	58.2	70.3	63.7
College Work Study	4.3	2.3	0.6	2.0
Federal Guaranteed Student Loan	2.6	3.6	1.8	2.8
National Direct Student Loan	3.0	2.6	0.7	2.0
Other Loan	1.3	2.0	1.3	1.6
Full-time Work	2.0	2.5	1.8	2.2
Part-time Work	10.0	15.5	12.2	13.5
Savings	7.0	11.2	9.4	9.9
Other Financing	2.0	1.9	1.8	1.9
Student Net Cost	32.2	41.6	29.6	35.9
Grand Total	99.9	99.8	99.9	99.6

Note: Totals do not equal 100.0 percent due to rounding.

Source: Unpublished analyses conducted by the Higher Education Research Institute based on data from the national survey of freshmen entering college in 1975 as reported in Astin, A. W.; King, M. R.; and Richardson, G. T. *The American Freshman.* Los Angeles: Laboratory for Research in Higher Education, University of California, Los Angeles, 1975.

[19] However, average total costs appear to vary directly with income. A knowledge of the collegiate enrollment mix and a careful study of Table A-10 suggests that youth from high-income families spend more for college, followed at some distance by middle-income youth, followed closely by low-income youth. Presuming that higher expenditures are by choice—the choice is to select a lower-priced college—the apparent inequity to the middle-income group is altered slightly.

work, personal savings, and, to a lesser extent, loans make up the differences for middle-income students.

Direct Effects of Student Aid—Although these findings by no means prove that rising costs and the selective awarding of student aid have a direct bearing on enrollment rates and enrollment rate changes by income level, scattered reports based upon limited samples of both students and nonstudents suggest this to be the case. For example, in reporting on four attitudinal studies of recipients of various student aid programs, Carlson (1975) observed that the attendance decision of many recipients would have been altered if aid had not been awarded. In each study, the portion of aid recipients whose decision was changed from nonattendance to attendance was inversely related to family income. It should be noted that award *amounts* also vary inversely with family income. Generally, a clear majority of low-income youth stated that the aid program had made the difference in their ability to attend college; in middle-income categories, the effect was somewhat less; in high-income categories, the effect was quite small. These findings suggest that the relatively positive changes in higher education participation rates reported above for low-income youth may be, in considerable part, a function of the student aid awarded.

Although data for college nonattenders are less readily available, the pattern of findings is supportive of the evidence reported earlier in this section: money problems or related difficulties in attending college are cited by a larger percentage of low-income nonattenders followed by middle-income nonattenders, although the absolute numbers are largest for the middle-income group.[20] For example, in a study of 1,000 New York and Pennsylvania high school students who were within one month of graduation, Leslie, Johnson, and Carlson (1976) found that although planned attendance *rates* for the low- and and middle-income students were almost equal, in absolute numbers, six times as many of the planned nonattenders in the latter group than in the former listed money constraints. Similarly, the National Longitudinal Study reported that although low-socioeconomic-status nonattenders were the most likely to list money problems, the absolute numbers of middle-class students listing these problems were the highest of any group. This pattern held for all categories of planned college nonattenders (e.g., work, military, homemaking) except one, and in this category the numbers were approximately equal (NCES, *National Longitudinal Study of the High School Class of*

[20] The middle-income category contains more persons than the lower- or upper-income groups because income assumes a quasi-normal distribution.

1972. Student Questionnaire and Test Results by Academic Ability, Socioeconomic Status, and Region, 1976).

Summary

This section has presented some relationships between rising college costs and student aid, and changing enrollment rates (access) and attendance patterns (choice) according to family income. (No figures on retention and completion rates by income were available.) It has been seen that during the past decade, enrollment rates have declined for most income groups, though for the low-income category little change has been noted. Nevertheless, enrollment rates for this group remain markedly lower than for others. It has been seen also that college choice for the low- and high-income groups has been reduced on one measure and has been increased on a second measure; on both measures, choice for the middle-income group has been reduced. Further, it has been seen that the "net cost" of college attendance is the highest for middle-income students and that direct connections between student aid and varying enrollment rates by income group can be inferred from the self-reports of aid recipients.

Changing Enrollments by Race and Sex

Perhaps as much or more than equity by family income, considerations of racial equity were the driving forces behind the student aid programs of the late 1960s and early 1970s. Income and race are, of course, highly correlated, but the societal disadvantages of minority race are considered in many quarters to be greater than the disadvantage of low income.[21] If social equity is to be achieved for members of minority races, one of the key ingredients will be equal higher education opportunities.

Concern for another higher education minority—women—also drew public attention in the early 1970s. It was noted that women attended postsecondary institutions in disproportionately small numbers and that if the effects of long-standing cultural biases were to be overcome, higher education opportunities for women would have to be expanded. Although it is suspected that social forces larger than student aid programs may have accelerated enrollment growth for women during the past decade, these patterns and their relations to aid are worthy of study here, and attention is drawn specifically to women in the latter part of this section.

Enrollment Trends by Racial and Ethnic Groups

Access—The annual ACE surveys for 1966 through 1975 show substantial changes in the racial and ethnic composition of the entering freshman class (see Table 11). In 1966, 90.7 percent of the freshman class was Caucasian; in 1975, the figure was 86.5 percent. This means that in ten years the minority share of enrollments grew from just over 9 percent to 13.5 percent, which is roughly the minority portion (13.8 percent) of 18-to-21-year olds in the population.

Given the considerably higher high school dropout rate among minorities, (freshman) enrollment parity between whites and nonwhites appears essentially to have been achieved. This can be seen most clearly in Figure 3, where college attendance rates for high school graduates in October of the year of graduation have been plotted and the data fitted to curves mathematically. As noted in Figure 3, the racial participation rates appear to have merged in

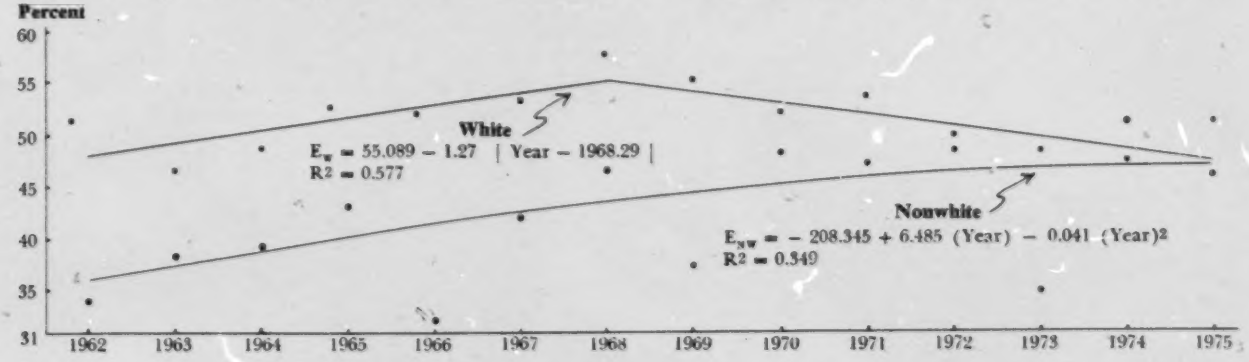
[21] Because racial minorities are more likely than the majority to be poor, the former tend to qualify more easily for student aid.

Table 11. Composition of Freshman Enrollments, by Race: 1966-1975 (percentages)

Race	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Caucasian	90.7	89.9	87.3	90.9	88.6•	91.4	87.3	88.5	88.6	86.5
Negro	5.0	4.3	5.8	6.0	9.1•	6.3	8.7	7.8	7.4	9.0
American Indian	.6	.7	.7	.3	.2	.9	1.1	.9	.9	.9
Oriental	.7	.8	1.1	1.7	.9	.5	1.1	1.1	.9	1.5
Mexican American/Chicano						1.1	1.5	1.3	1.5	1.7
Puerto Rican/American						.2	.6	.4	.6	.7
Other	3.0	4.1	5.1	1.1	1.1	1.2	1.8	1.5	1.7	1.9

•Caucasian category changed to Caucasian/White; Negro category changed to Negro/Black/Afro-American.
Source: *The American Freshman: National Norms for Fall 1966-1975*, ACE.

Figure 3. Proportion of High School Graduates Enrolled in College in October of Their Senior Year, by Race



1975 (see Table A-11 for specific data and source).[22] This pattern of findings for minority freshmen was extended to all full-time enrollments by an Office of Civil Rights (OCR) survey released in November of 1976. The survey reported that minority enrollments were 13.1 percent of full-time enrollments in 1974, while the minority proportion of the total 18-to-24-year-old population was 13.8 percent (*The Chronicle of Higher Education*, November 8, 1976, p. 7). The OCR survey, which sampled 3,000 campuses, reported across-the-board increases for all minority groups in institutions of both sectors and at all levels. In 32 states, the percentage of minority group students enrolled in college in 1974 was greater than the percentage of minority group members in state populations.

Although both of these reports are encouraging for minority students considered as a whole, parity in access has not been achieved for the largest minority group—blacks—according to the ACE. Whereas 9.0 percent of the 1975 freshman class identified themselves as Negro/black/Afro-American (Table 11), 12.0 percent of all 18-to-21-year-old Americans were black. A recent Census Bureau Report (Table A-12) reveals a comparable disparity for *all* black students. In 1975, about 944,000 or nearly 10 percent of all students were black, in comparison to 12 percent of the 18-to-24-year-old population.

Nevertheless, marked improvement in access for blacks has been noted in recent years. The ACE figure of 9.0 percent for black freshmen in 1975 was 5.0 percent in 1966. Considering *all* black students, since 1970, black enrollments increased by 80.8 percent compared to 30.9 percent for all students (Table A-12).

Another interesting and encouraging view of the racial enrollment data has been developed by Engin Holmstrom of the ACE. Holmstrom (1976) argues convincingly that social status is perhaps the most stable benefit of a college education, and that social mobility can be assessed most sensitively by comparing college enrollment rates among first-generation college students. Holmstrom has shown that a much larger proportion of black students in four-year colleges and universities are first-generation students than is true for nonblacks, and that the pattern holds in both the public and the private sectors (see Table A-14). Holmstrom concludes,

> Thus, in a short period, higher education institutions provided the means

[22] Data showing these patterns have been questioned by some minority spokesmen. It is possible that the data are in error, although the source of that error would have to be consistent because all major surveys report similar findings.

Table 12. Composition of Freshman Enrollments by Race, Institutional Level, and Sector: 1966 and 1975 (percent)

Racial Background	All Institutions	All 2-year Colleges	All 4-year Colleges	All Universities
1966				
Caucasian	90.7	89.1	88.8	95.0
Negro	5.0	4.1	7.7	1.6
American Indian	0.6	1.0	0.4	0.5
Oriental	0.7	0.9	0.6	0.7
Other	3.0	5.0	2.5	2.2
1975				
White/Caucasian	86.5	84.6	85.3	91.7
Black/Negro/Afro-American	9.0	8.5	11.9	5.4
American Indian	0.9	1.0	0.8	0.6
Oriental	1.5	1.9	0.8	1.7
Mexican-American/Chicano	1.7	3.1	0.8	0.7
Puerto Rican-American	0.7	0.7	0.9	0.3
Other	1.9	2.6	1.5	1.3

Source: ACE Annual Freshman Surveys.

> of upward social mobility to over a quarter-million students—many of whom were, at the time of college entry, "disadvantaged" in status. (p. 10)

On the other hand, completion and retention rates are less encouraging (Table A-15). A Census Bureau study of the 1971 freshman class shows that the white proportion of the entering freshmen class enrolled as seniors in 1974 was 57.2 percent compared to 40.9 percent for blacks; that is, 42.8 percent of the whites and 59.1 percent of the blacks had either dropped out, "stopped out," or made less than "regular" progress. An ACE analysis of the 1970 class revealed a similar pattern when completion and retention rates were considered four years later (Table A-16).

Referring to Table A-4 in the Appendix, the correlations among freshman enrollments by race and aid and race and costs are seen to be fairly high. The white share of freshman enrollments is negatively correlated with student aid (–.58) and with costs (–.43), while these correlation values are both positive for nonwhites. This means that while aid and costs have gone up, the white share of freshman enrollments has gone down and the nonwhite share has gone up.

The regression analysis (Table A-13) shows that the increases in aid and in costs, plus changes in median family income and unem-

Table 12. (Continued)

2-year Colleges		4-year Colleges				Universities	
			Private				
Public	Private	Public	Nonsect.	Prot.	Cath.	Public	Private
88.9	93.2	85.5	84.7	91.9	94.2	95.1	94.7
7.0	0.5	10.1	12.9	6.0	1.1	1.5	2.1
1.0	0.7	0.7	0.2	0.4	0.3	0.6	0.3
1.0	0.5	0.6	0.6	0.5	0.9	0.6	1.0
4.9	5.1	3.1	1.6	1.5	3.6	2.3	1.9
84.8	81.3	84.0	85.6	87.1	89.4	91.7	91.7
7.9	16.1	13.2	11.2	11.1	6.4	5.6	4.6
1.0	0.9	0.8	0.9	1.1	0.7	0.6	0.6
2.0	0.4	0.7	1.6	0.6	0.7	1.7	1.9
3.3	0.5	0.6	0.8	0.6	2.3	0.5	1.5
0.7	0.8	1.2	0.4	0.2	0.9	0.2	0.6
2.7	1.9	1.4	2.1	1.2	1.9	1.1	2.0

ployment rates by racial grouping, explain about 80 percent of the total variance in the racial enrollment proportion changes of the past decade. For freshman nonwhites, a $100-per-student increase in aid[23] is associated with a 2.5 percent increase in the nonwhite share of total enrollments. Holding aid constant, a $100 cost increase is associated with a 2.5 percent decrease in the nonwhite share of total enrollments. For whites, a $100 increase in aid is associated with a 2.3 percent share decrease; and holding aid constant, a $100 increase in costs is associated with a 2.5 percent enrollment share increase. In other words, if there had been no increases in student aid, the analysis suggests that increasing costs would have been accompanied by an increasing white share of total freshman enrollments.

College Choice—In regard to college choice—enrollment shares in private and in higher level institutions—the data are generally favorable to minority group members. On the basis of the 1975 ACE freshman norms, it is seen, for example, that enrollment shares for freshman blacks in four-year colleges and in three of five categories of private institutions are greater than the black proportion (9.0

[23] Per student for *all* students.

Table 13. Characteristics of All Students (Unduplicated Count) Receiving Aid Under Office of Education Assistance Programs, by Type and Control of Institution, 1974-75 (percent)*

Characteristics	Total Recipients	Public Institutions				Private Institutions			
		Total	Two-Year	Four-Year	University	Total	Two-Year	Four-Year	University
Total	1,584,000	1,034,000	335,000	419,000	280,000	551,000	36,000	420,000	94,000
Ethnic Group									
Minority	32.5	38.3	49.4	38.0	24.7	24.8	25.5	24.8	24.7
Nonminority	66.4	61.7	50.6	62.0	75.3	75.2	74.5	75.2	75.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sex									
Female	51.0	52.3	56.5	50.6	49.3	48.7	70.0	49.9	42.6
Male	49.0	47.7	43.5	49.4	50.7	51.3	30.0	50.1	57.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Excludes Guaranteed Student Loan Program.

Source: *Student Assistance: Participants and Programs 1974-75*, Frank J. Atelsek and Irene L. Gomberg, Higher Education Panel Reports, November 27, ACE, December 1975.

Table 14. Percentage of Total College Costs Paid From Various Sources: by Race of Student

Source	Race of Student						
	White	Black	Amer. Ind.	Orient.	Mex. Amer.	Puerto Rican	Other	All

BEOG	5.7	30.0	11.8	9.0	22.5	25.4	8.7	8.2
SEOG	0.8	3.8	1.5	1.8	2.3	2.3	1.5	1.1
State Scholarship	3.5	4.4	3.8	5.5	5.1	4.3	3.6	3.6
Local, Private Scholarship	3.6	3.6	4.5	3.7	4.0	3.3	3.1	3.6
Student's GI Benefits	0.9	1.7	3.0	1.3	2.1	2.3	1.7	1.0
Parents' GI Benefits	0.5	0.6	1.4	0.2	0.9	0.3	0.7	0.5
SS Dependents' Benefits	1.9	2.2	2.7	1.6	3.8	3.1	2.0	1.9
Total Grants	16.9	46.3	28.7	23.1	40.7	41.0	21.3	19.9
Parents or Family	46.0	24.6	32.8	45.3	25.2	27.0	40.3	43.8
Spouse	0.4	0.4	1.2	0.3	0.7	1.6	0.5	0.5
Total Family Assistance	46.4	25.0	34.0	45.6	25.9	28.6	40.8	44.3
Total Grants and Family Assistance	63.3	71.3	62.7	68.7	66.6	69.6	62.1	64.2
College Work Study	1.6	5.3	2.6	2.0	3.3	5.7	2.3	2.0
Federal Guaranteed Student Loan	2.7	3.0	1.9	1.3	1.3	2.0	2.8	2.7
National Direct Student Loan	1.8	3.5	1.4	1.8	1.9	1.6	1.8	1.9
Other Loans	1.6	1.4	1.7	1.0	1.0	1.6	1.3	1.6
Full-time Work	2.1	2.1	3.4	1.1	4.1	2.0	3.6	2.2
Part-time Work	14.0	6.9	12.8	12.5	13.3	9.4	13.6	13.4
Savings	10.5	4.1	9.8	8.4	6.1	5.6	9.5	9.9
Other Financing	1.8	1.9	3.4	2.7	1.9	2.0	2.7	1.9
Student Net Cost	36.1	28.2	37.0	30.8	32.9	29.9	37.6	35.6
Grand Total	99.4	99.5	99.7	99.5	99.5	99.5	99.7	99.8

Note: Totals do not equal 100.0 percent due to rounding.

Source: Unpublished analyses conducted by the Higher Education Research Institute based on data from the national survey of freshmen entering college in 1975 as reported in Astin, A. W.; King, M. R.; and Richardson, G. T. *The American Freshman*. Los Angeles: Laboratory for Research in Higher Education, University of California, Los Angeles, 1975.

Table 15. Summary of Enrollment in All Institutions of Higher Education, by Sex, Degree-credit Status, and Institutional Type: United States, Fall 1964-1975 (Residents and Extension Opening Fall Enrollment, in Thousands)

Year (Fall)	Total degree-credit and non-degree-credit enrollment	Sex				Total non-degree-credit enrollment	Men
		Men	Women	% Men	% Women		
1964	5,280	3,249	2,031	61.5	38.5	330	216
1965	5,921	3,630	2,291	61.3	38.7	395	255
1966*	6,390	3,856	2,534	60.3	39.7	462	279
1967*	6,912	4,133	2,778	59.8	40.2	505	311
1968	7,513	4,478	3,035	59.6	40.4	585	359
1969	8,005	4,746	3,158	59.3	40.7	521	327
1970	8,581	5,044	3,537	58.8	41.2	661	407
1971	8,949	5,207	3,742	58.2	41.8	833	490
1972	9,215	5,239	3,976	56.9	43.1	950	538
1973	9,602	5,371	4,231	55.9	44.1	1,082	599
1974	10,224	5,622	4,601	55.0	45.0	1,200	554
1975	11,240	6,172	5,068	54.9	45.1		

*The breakdown between degree-credit and non-degree-credit enrollment in 1966 and 1967 is estimated.

Note: Data are for 50 states and the District of Columbia for all years. Because of rounding, details may not add to totals. Final revised figures for fall 1973 opening fall enrollment in institutions of higher education are slightly different from those shown on the table.

percent) of all freshman enrollments (see Table 12).[24] The university enrollment rate for black freshmen, however, is below the black proportion overall (5.4 percent versus 9.0 percent).

Significant and positive changes in this racial distribution are evident from a comparison of the 1966 and 1975 ACE norms (Table 12). Black enrollment shares have grown disproportionately in both public and private universities, in private two-year colleges, and in two of three categories of private four-year colleges. In the single exception, private nonsectarian colleges, the black share already had been high in 1966.

The Cost-Aid-Race Relationships—Although the relationship of student aid to college access and choice can only be inferred from

[24] The 1976 OCR survey reported a 1974 private institution minority enrollment rate of 12.9 percent, which is considerably higher than overall private minority enrollment rates from the 1975 ACE Freshman Survey.

Table 15. (Continued)

Sex			Total degree-credit enrollment	Sex			
Women	% Men	% Women		Men	Women	% Men	% Women
114	65.5	34.5	4,950	3,033	1,917	61.3	38.7
139	64.6	35.4	5,526	3,375	2,152	61.1	38.9
183	60.4	39.6	5,928	3,577	2,351	60.3	39.7
194	61.6	38.4	6,406	3,822	2,584	59.7	40.3
226	61.4	38.6	6,928	4,119	2,809	59.5	40.5
194	62.8	37.2	7,484	4,419	3,065	59.1	40.9
254	61.6	38.4	7,920	4,637	3,284	58.6	41.4
343	58.8	41.2	8,116	4,717	3,399	58.1	41.9
412	56.6	43.4	8,265	4,701	3,564	56.9	43.1
484	55.4	44.6	8,520	4,772	3,747	56.0	44.0
547	54.5	45.5	9,023	4,939	4,055	55.1	44.9
						55.0†	45.0†

Sources: Enrollment data and estimates are based on U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, publication: (1) *Opening (Fall) Enrollment in Higher Education*, annually, 1964 through 1968, 1971 through 1975, (2) *Fall Enrollment in Higher Education, Supplementary Information*, 1969 and 1970, and (3) data from *Resident and Extension Enrollment in Institutions of Higher Education*, fall 1966 (unpublished).

†Estimated.

these findings, other available evidence is consistent with the relationships implicitly suggested. Table 13 shows that in all institutional levels and sectors, the proportion of Office of Education aid recipients who are minority students is much higher than the proportion of these individuals in the institutional student bodies as a whole. For example, as noted earlier, minority students compose less than 14 percent of college student bodies but account for 33.6 percent of Office of Education aid awards.

Table 14 provides a broader breakdown, both by racial subgroup and by source of student funds. Again it is seen that the minority groups receive larger extra-family subsidies than do whites: the total Grants line shows, for example, that black freshmen receive 46.3 percent of their total costs in the form of student grants compared to 6.9 percent for whites. However, whites (and Orientals) receive much larger subsidies from parents than do the other identifiable

Table 16. Composition of First-Time, Full-Time Enrollments, by Sex, Level, and Sector: 1966 to 1975

	1966	1967	1968	1970	1971	1972	1973	1974	1975
Men	54.3	55.6	56.6	54.8	54.4	53.9	52.8	52.2	53.2
Women	45.7	44.4	43.4	45.2	45.6	46.1	47.2	47.8	46.8

	1966				1975			
		M	F			M	F	
Two-Year Public	58.2	60.3	39.7	41.8	55.7	56.5	43.5	44.3
Two-Year Private		50.1	49.9			45.2	54.8	
Four-Year Public	49.5	48.9	51.1	50.5	49.6	49.3	50.7	50.4
Four-Year Private (Nonsectarian)		55.6	44.4			53.3	46.7	
Four-Year Private (Protestant)		43.9	56.1			49.1	50.9	
Four-Year Private (Catholic)		36.7	63.3			43.8	56.2	
Public Universities	58.2	56.9	43.1	41.8	54.0	52.6	47.4	46.0
Private Universities		62.5	37.5			59.0	41.0	
All		54.3	45.7			53.2	46.8	

Source: ACE Annual Freshman Surveys.

Table 17. Enrollments in All Institutions of Higher Education, by Sex, Sector, and Level: Fall 1975

Sex	Public	Percent	Private	Percent	All	Percent
Men	4,808,767	54.4	1,363,372	56.7	6,172,074	54.9
Women	4,035,355	45.6	1,032,753	43.3	5,068,108	45.1
Total	8,844,062	100.0	2,396,125	100.0	11,240,187	100.0

	Two-Year	Percent	Four-Year	Percent	University	Percent	All	Percent
Men	2,109,228	54.4	2,104,315	53.4	1,958,536	57.7	6,172,079	54.9
Women	1,768,513	45.6	1,835,672	46.6	1,463,923	42.3	5,068,108	45.1
All	3,877,741	100.0	3,939,987	100.0	3,422,459	100.0	11,240,187	100.0

Source: NCES Annual Survey.

racial or ethnic groups. For example, blacks receive only 24.6 percent of their net costs from their parents compared to 46.0 percent for whites.

The end result is that whites generally experience a higher net college cost than do minority members, although an exception is noted in the case of American Indians. The average net cost to all students is 35.8 percent of average total costs. American Indians (37.3 percent) followed by whites (36.7 percent) experience the highest net costs; and blacks (28.7 percent), Puerto Ricans 30.4 percent), Orientals (31.3 percent), and Mexican-Americans (33.4 percent) experience the lowest net costs, respectively. The total college costs incurred by these groups vary considerably, and part of the differences in net costs can be traced to the incurring of higher total costs by certain of these groups (ACE 1975).

Summary—The status of racial minorities in American higher education has improved markedly during the past decade, and parity with whites has been achieved on most measures. Racial equity has been advanced and, on balance, may already be an accomplished fact. Yet, disparities remain, since completion and retention rates among black college students are lower than for the white majority. Finally, it would appear that the progress made may be due in part to student aid programs that result in the lower net costs of college attendance experienced by most minority groups. Unfortunately, data are not available regarding the importance minority aid recipients attach to aid in affecting their college attendance decisions.

Enrollment Trends by Sex

Access—Like low-income and minority persons, women are increasing their share of college enrollments; nevertheless, they remain underrepresented in the college-going population (see Table 15). In 1964, women accounted for 38.5 percent of total enrollments, a value that had increased to 45.1 percent by 1975. Although this was major progress for women, equity had not yet been achieved. In 1975, women had composed 49.6 percent of the 18-to-24-year-old population. The same pattern holds for freshmen women: they have increased their share of freshmen enrollments, but have not achieved parity with men (Table 16).

Although it would appear that the enrollment status of women in higher education is improving, some discouraging signs for the future are evident. From the Holmstrom Study (Table A-17), it is seen that 53.6 percent of all male freshmen enrolled in four-year institutions were first-generation students, compared to only 49.9 per-

cent for women, the discrepancy being greatest in private institutions. In other words, a smaller portion of the female than of the male enrollments represented a break with family and cultural traditions. A larger portion of men than women were the first of their families to attend these collegiate institutions. Further, considering retention rates, 49.6 percent of the women in the 1971 freshman class were enrolled as seniors in 1974 as compared with 60.9 percent of the men (Table A-15). Also, in institutions at all levels, more men than women appear to complete their education within four years (Table A-16).

By once again viewing Table A-4 in the Appendix, the correlations between the male and female shares of total enrollments and student aid and costs can be noted. It is seen that the values for males are −.98; for females, +.98. In other words, the decline in the male share and the increase in the female share of total enrollments are very strongly associated with increases in aid and costs.

The regression analysis by sex (Table A-18) shows that changes in aid and costs, plus changes in family income and unemployment rates, explain almost all of the variation in the male and female enrollment shares. For males, a $100 increase in aid is associated with a .32 percent decrease in the enrollment share, compared to a .37 percent increase for females. Similarly, holding aid constant, a $100 cost increase is associated with a .17 percent share decrease for males and a .18 percent share increase for females. In other words, the growth in aid programs appears to be associated with an increase in the female share of enrollments and a decrease in the male share. But unlike the patterns for low-income youth and minorities, even if aid had not been increased, women apparently would have coped with the rising costs of attendance and increased their share of enrollments. This supports the earlier suggestion that social forces in addition to student aid are operating to affect changes in the collegiate enrollments of women.

College Choice -Women also have been improving their "lot" in regard to college choice. Although freshman women clearly are underrepresented in private universities, they are almost on a par with men in universities overall, and they are overrepresented in four-year colleges, particularly in private four-year colleges (refer to Table 16).[25] Further, over time, the representation of freshman women in private and higher-level institutions has improved noticeably. Comparing the ACE freshman norms for 1966 and 1975 reveals a general

[25] Based on the female share of all enrollments.

leveling. For example, the female portion of two-year enrollments has risen, but so has the female share of university enrollments, both in public and in private institutions.

When current *total* enrollments are considered, it is seen that women presently do not fare as well as men in terms of attendance at higher-level and private institutions (see Table 17). Whereas women make up 45.1 percent of all enrollments, they compose only 43.3 percent of the student bodies of private institutions and 42.3

Table 18. Percentage of Total College Costs Paid by Various Sources, by Sex of Student: 1975

Source	Men	Women	All Students
BEOG	7.8	8.7	8.2
SEOG	1.0	1.1	1.1
State Scholarship	3.4	3.8	3.6
Local, Private Scholarship	3.3	3.9	3.6
Students' GI Benefits	1.8	0.2	1.0
Parents' GI Benefits	0.6	0.5	0.5
SS Dependents' Benefits	1.8	2.1	1.9
Total Grants	19.7	20.3	19.9
Parents or Family	40.6	47.2	43.7
Spouse	0.3	0.7	0.5
Total Family Assistance	40.9	47.9	44.2
Total Grants and Family Assistance	60.6	68.2	64.1
College Work Study	1.8	2.2	2.0
Federal Guaranteed Student Loan	3.0	2.5	2.7
National Direct Student Loan	1.7	2.2	1.9
Other Loan	1.5	1.7	1.6
Full-time Work	3.0	1.3	2.2
Part-time Work	15.2	11.4	13.4
Savings	10.4	9.2	9.9
Other Financing	2.5	1.1	1.9
Student Net Cost	39.4	32.3	36.1
Grand Total	100.0	100.5	100.2

Note: Totals do not all equal 100.0 percent due to rounding.

Source: Unpublished analyses conducted by the Higher Education Research Institute based on data from the national survey of freshmen entering college in 1975, as reported by Astin, A. W.; King, M. R.; and Richardson, G. T. *The American Freshman*. Los Angeles: Laboratory for Research in Higher Education, University of California, Los Angeles, 1975.

percent of the enrollments of universities. They are, however, slightly overrepresented in four-year colleges.

The Cost-Aid-Sex Relationships—The relationship of student aid to the improving conditions of college choice for women was suggested in Table 13. Although women composed only about 45.0 percent of overall enrollments in 1974, they received 51.0 percent of Office of Education student aid awards. Further, in all six institutional categories, women received a larger share of awards than suggested by their numbers in these institutions. On these bases, student aid may have played a role in expanding access and choice for women in higher education.

Thus, it is not surprising that, on the average, women experience a lower net college cost (31.8 percent) than men (39.4 percent) (see Table 18). Most of this difference is accounted for by larger parental contributions, although in all scholarship and grant categories women also receive a somewhat larger percentage contribution than men. Men make up the difference chiefly by more work. Part of the discrepancy in net costs, however, is accounted for by males opting for higher-priced institutions (see Table A-10). If men incurred the same total costs as women, the net cost gap would be reduced.

Data regarding the direct role played by student aid in altering enrollments by sex is severely limited. The only major study that examined this question—the College Student Grant Study—found that state student aid was more instrumental to the enrollment decisions of women than of men in four of five state programs studied (Fife and Leslie 1976). In these four state-aid programs, the margin was of the order of 10 percent; approximately 10 percent more women than men stated that they would not have attended college without the aid.

Summary—Higher education opportunities for women have been improved considerably in recent years although parity with men has not yet been achieved. The female share of postsecondary enrollments has grown, as has the female share of enrollments in private and in higher-level institutions. The gap between the female and male shares of enrollments generally has decreased but has not closed. Also, female retention and completion rates are lower than those for males. The present lower net college costs for women could be expected in the future to further close the male-female enrollment gap.

Summary and Discussion

The major purpose of this report has been to assess the effects of rising college costs and increasing student aid appropriations on collegiate access, choice, and retention and completion. Attention has been drawn to three groups of students which typically have been underrepresented in higher education—those from low-income families, racial minorities, and women.

This report has analyzed the pattern of enrollment changes over time in relation to price and student aid increases. Also examined has been evidence regarding who receives aid and the importance of student aid in the formulation of college enrollment decisions. From these analyses inferences have been drawn regarding the effects of recent changes in higher education financing policy upon the three primary groups studied.

Summary of Overall Enrollments and Enrollment Conditions

In the second section, the magnitude of overall enrollment, cost, and student aid increases were noted over time. It was observed that the absolute growth in higher education enrollments generally has been smooth even though the *rate* of growth has declined in recent years. Further, when the most broad-based data source was considered, it was evident that the propensity for higher education —i.e., the higher education participation rate—has declined substantially, too, although the *overall* rate decline may have been partially a statistical artifact and a function of higher than normal male enrollment rates during the Vietnam War.

Another part of the exploration for these declines, however, may be found in the increasing costs of college attendance. The total costs of college have risen sharply during the past decade, even more sharply than increases in the rate of inflation; and it is now a well-established principle that as higher education prices rise, enrollment demand declines.[26]

Also, it was noted in this second section that appropriations for student aid have grown substantially during the past decade. In fiscal 1976, total public student aid appropriations for higher education, both need- and nonneed-based, averaged over $1,000 per full-

[26] There are several qualifiers to this generalization. Among them is the assumption that all else remains constant—which it never does.

time student enrolled. This figure represents approximately 36 percent of the current total average costs of collegiate attendance and a major change in the pattern of American higher education's financial history.

Summary of the Changing Enrollment Mix

The major evidence central to the purpose of this report was found in how various groups, disaggregated by income, race, and sex, have been faring during the time period under study. This evidence was examined in the second and third section of this report.

Income—Table 19 provides a summary of key access, choice, and net cost data for the three income groups—low, middle, and high. In regard to access, line A.2 of Table 19 shows that higher education participation rates have not been improved in any broad income category, although it is apparent that the low-income group, followed by the high-income group, have coped better with changing conditions than the middle-income group. Indeed, the low-income *share* of enrollments has grown during the past decade.

In spite of (relatively) improving access for low-income youth, on absolute grounds they have not yet achieved enrollment parity with those of greater means. The most recent participation rate for low-income youth is markedly below the normative (average) rate and drastically below the high-income participation rate (Line A.1). Further, the deviation from the high-income enrollment rate is not reduced when adjustments in the population base are made to account for those who have dropped out of high school and those who have already graduated from college (Line A.3). Access for middle-income students is approximately at the norm value on both measures.

Concerning improvement in college choice, the results are mixed for the low- and high-income groups and are negative for the middle-income group (Lines B.1 and B.2 of Table 19). The low-income share of university-level enrollments has declined and the low-income share of private-sector enrollments has increased, while the opposite has been true for high income students. The middle-income shares of both higher level and private college enrollments have declined during the period under study.

Part C of Table 19 shows that students from high-income families pay the lowest portion of their total costs, followed fairly closely by low-income students, while middle-income youth pay the highest proportion of their total costs. From these data, total cost data in Table A-10, and proportional enrollment distribution data, it is estimated that middle-income students must earn or otherwise make

Table 19. Summary of Access, Choice, and Net Cost by Income: Most Recent Data and Change Over Time (in Percentages)

Category	Income[7] Low	Middle	High	Norm or Standard
A. Access (Participation Rates)				
1. Most recent (1975) data[1]	22.6	34.1	51.1	37.1[4]
2. 1967-75 rate change[1]	- .4	- 5.3	- 3.7	- 3.1[5]
3. Adjusted (1972) data[2]	23.8	34.9	55.7	34.1[4]
4. Aid recipients[3] (Percent of total student costs paid by student aid)	48.4	21.0	7.7	20.2[4]
B. Choice[6] (Participation Rates)				
1. Most recent (1974) data (%)				
a. Private enrollments	17.8	20.4	26.5	22.7[4]
b. Four-year enrollments	65.5	71.4	79.0	73.6[4]
2. 1968-75 freshmen enrollments rate change				
a. Private	6.5	- 3.1	- 3.4	0
b. Four-year	1.2	- 2.0	.8	0
c. University	- 2.6	- 4.6	7.2	0
C. Net Costs[3] (Percentage of Total Costs)	32.2	41.6	29.6	35.9[4]

1 Census, Primary Families, dependent members enrolled full-time.

2 Adjusted for number of high school nongraduates and for college graduates.

3 ACE 1975 Freshman Survey.

4 Average for all families.

5 Average for three income groups.

6 Note: Among all aid recipients, 26.8 percent attended private four-year institutions; among federal aid recipients 33.7 percent attended private four-year institutions; only 21.7 percent of all freshmen so attended (NLS, 1972 Freshmen).

7 For distribution of income category see chapter three.

up about 16 percent more in dollars than youth of high-income families and about 36 percent more than youth of low-income families.[27]

Race—Summary data by race are presented in Table 20. Viewing the trend data, it is evident that minority groups have made major

27 Arrived at by taking into account the varying higher education costs of the three income groups and the enrollment distribution of these groups by sector and level. The 16 and 36 percent figures are percentages, not net cost rates.

Table 20. Summary of Access, Choice, Retention and Completion, and Net Cost by Race: Most Recent Data and Changes Over Time (percentages)

Category	Minority or (Black)	White or (Non Black)	Norm or Standard
A. Access			
1. Most recent (1974) percent of total enrollment[1]	13.1	86.9	13.8[7]
2. Most recent (1974) percent of total enrollments[2]	(9.7)	(90.3)	(12.3)[8]
3. 1970-1975 percent change	(80.8)	(30.9)	(30.9)[9]
4. 1966-1975 percent total enrollments rate change[3]	+ 4.2	− 4.2	0
5. Adjusted (1975) freshmen enrollment rates[4]	49	49	equity
6. 1962-1975 adjusted rate change in 5	+ 14	− 2	0
7. Aid recipients (1974)[5] (% of all aid recipients)	33.6	66.4	13.8[7]
B. Choice[6]			
1. Most recent (1975) percent of freshmen enrollments			
a. Private	12.8†	87.2†	13.5[10]
b. Four-year	14.7	85.3	13.5[10]
c. University	8.3	91.7	13.5[10]
2. 1966-1975 freshmen enrollments share change			
a. Private	+ 4.2†	− 4.2†	0
b. Four-year	+ 3.5	− 3.5	0
c. University	+ 3.3	− 3.3	0
C. Retention and Completion			
1. Percent of 1971 freshmen who are 1974 Seniors[2]	(40.9)	(57.2)	equity
2. Received degree or still enrolled four years later[6]	(49.8)	(54.2)	equity
D. Net Costs (% of total costs)	(28.7)	36.7	35.8[11]

† Estimated.

1 Office of Civil Rights Survey of 3,000 institutions. Validated closely by 1974 ACE Freshman Norms.

2 Census Bureau.

3 ACE norms: Change in portion of freshman enrollments non-white and white.

4 Portion of high school graduates in college the year of graduation.

5 ACE 1975 study.

6 ACE Freshman Surveys.

7 Percent of all 18-24 year olds who are minorities.

8 Percent of all 18-24 year olds who are black.

9 White rate.

10 ACE norm: percent who are minority.

11 Average for all students.

progress in regard to college access. This is true of the "minority" category, overall, as well as for blacks (Lines A.4 and 6, and A.3, respectively). Parity in college access almost has been achieved for racial minority groups taken as a whole (Lines A.1 and A.5), although blacks probably continue to be underrepresented in higher education student bodies in comparison to their numbers in the 18-to-24-year-old population (Line A.2).

Regarding college choice, it would appear that parity has been roughly achieved when all racial minority groups are combined (Lines B.1). The proportion of such minority group members who were enrolled as freshmen in 1975 at four-year colleges slightly exceeded the proportion of minority group students enrolled overall, while the minority representation in private institutions was only slightly less than the total minority enrollment rate. Only in universities were minority members clearly underrepresented. Increases since 1966 are seen in B.2 of Table 20.

The most discouraging data in regard to race relate to retention and completion rates for blacks (Part C); the rates for blacks are markedly lower than for whites. Although opportunities to enroll in college apparently are nearing parity by race, black dropout rates continue to be high.

A good deal of the credit for the gains that have been noted for minorities may be due to the student aid programs of the 1960s and 1970s. Net college costs are generally higher for whites than for minority students, especially for blacks. The high number of aid recipients who are black is evident in Table 13.

Sex—Table 21 contains summary data by sex. Although women still compose a smaller percentage of higher education enrollments than men (Line A.1), considerable gains in access have been made during the past decade (Line A.2). Considering college choice, only in universities have gains for women been noted during the past decade. However, in the case of four-year colleges, women already were in a dominant position a decade ago; and the very modest decline noted in Line B.2.b is probably in part due to the opening of previously single-sex and heavily female-dominated colleges to males, especially private, four-year colleges with religious affiliations (see Table 16). Nevertheless, equal choice has not been achieved for women (Part B.1), nor are retention and completion rates equal to those of men (Part C).

Perhaps the progress in college access that has been noted for women is related to their lower net costs of attendance (Part D). Although women are in the minority in higher education, they appear

Table 21. Summary of Access, Choice, Retention and Completion, and Net Cost by Sex: Most Recent Data and Changes over Time (in Percentages)

Category	Group		Norm or Standard
	Female	Male	
A. Access			
1. Most recent (1975) percent of total enrollments	45.1	54.9	49.6[6]
2. 1964-1975 rate change	+ 6.6	− 6.6	0
3. Aid recipients (1974)[1]	51.0	49.0	45.1[5]
B. Choice			
1. Most recent (1975) percent of total enrollments[2]			
a. Private	43.3	56.7	45.1[5]
b. Four-Year	46.6	53.4	45.1
c. University	42.3	57.7	45.1
2. 1966-1975 enrollment rate change[3]			
a. Private	− 1.5†	+ 1.5†	0
b. Four-Year	− .1	+ .1	0
c. University	+ 3.2	− 3.2	0
C. Retention and completion			
1. Percent of 1971 freshmen who are 1974 seniors[4]	49.6	60.9	equity
2. Received degree or still enrolled[3]	52.4	55.2	equity
D. Net Costs (Percentage of Total Costs)	31.8	39.4	35.9

†Estimated.

1 ACE 1975 Study.

2 NCES. The 1975 ACE norms show more positive data for women; see Table 29.

3 ACE Freshman Surveys.

4 Census Bureau.

5 Female share of enrollments.

6 Portion of 18 to 24 year olds who are female.

to receive a slight majority of at least one major form of student aid (Table 13).

Conclusions

Without question, major progress has been made during the past decade in advancing higher education opportunities for the poor, for

minorities; and for women. College access and choice, in particular, have been furthered; and although parity has been achieved or nearly so in only one of the three cases, the opportunity gap has been narrowed in the other two.

While part of this progress probably would have occurred independent of new financing policies, in all likelihood a good deal of the credit is due to the need-based student aid programs of the past decade. Recent social, economic and cultural changes in society have raised expectations among many members of these groups; and it is suspected that some progress in higher education opportunities would have been noted during the past 10 years even without public intervention. However, it is the view of many that only nominal higher education enrollment gains would have been noted for these groups if specific government financing policies had not been developed. In other words, causal relationships between aid and enrollments are believed to exist. This view is supported not only on impressionistic grounds but by the pattern of findings of this report as well.

If these causal relationships are assumed, then it may be concluded that need-based student aid programs have been successful in expanding, or at least limiting declines, in higher education access and choice for low-income persons, minorities, and females. These programs have done so by targeting aid on these three groups to the point that their net costs generally are lower than for other groups, especially the middle-income group.

This raises the issue about which much has been said and written in the 1970s—the so-called "plight of the middle class." The argument is that middle-income youth are caught between rising tuitions, which result from the diversion of institutional aid funds to student aid, and parental inability or unwillingness to meet the higher costs.[28] It also is asserted that low-income youth qualify readily for student aid, while the parents of high-income youth have the means to meet the higher costs.

The findings of this report probably will provide ammunition for both the proponents and the detractors of the "middle-income argument." For example, proponents can cite the declining college par-

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[28] Assuming a stability in funds for higher education, it is generally recognized that tuitions will have to be raised to increase student aid appropriations. See, for example, The Committee for Economic Development, *The Management and Financing of Colleges*, 1973; and The Carnegie Commission on Higher Education, *Higher Education. Who Pays? Who Benefits? Who Should Pay?* 1968.

ticipation rates among youth of middle-income families, and argue that the once-higher enrollment rates demonstrate a *desire* to attend college by hundreds of thousands of middle-income nonattenders. They can also point to middle-income enrollment declines in more costly, higher level and private institutions. Finally, they can cite the student cost data showing that middle-income youth are forced to make up a larger portion of their total college costs than youth of either low- or high-income families.

The detractors of the middle-income argument will find ample evidence in support of their position too. Perhaps the most convincing will be the findings that the low-income group continues to experience markedly lower postsecondary participation rates than either the middle- or high-income groups. Further, although *relative* progress has been shown in this regard for the low-income group, in absolute terms, a rate decline actually has been observed in recent years. Findings regarding college choice also show that parity has not been achieved for low-income youth.

College costs and student aid, of course, are not the full problem. Citizens deprived of various opportunities in their personal histories do not arrive at college admission offices equal in all respects. Some are poorly motivated due to environmental conditions, including lack of parental encouragement; others have extraordinary family responsibilities; and, perhaps most importantly, some require more study time than others, thus obviating the raising of additional funds through part-time work.

Another factor to be considered in this discussion is the concept of "expected family contribution." Clearly, a considerable portion of the higher net cost of middle-income students results from parental unwillingness to contribute as much as federal and state needs analyses determine that they should.[29] This is an important public policy issue: Should the public compensate for the unwillingness of families to assume the responsibility for educating their offspring? On the other hand, should students be penalized for parental parsimony?

A Need for Additional Public Policy—The present ongoing debate tends to pit lower-income persons against middle-income persons because the presumption is that money for one group will be taken

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[29] For a discussion of this issue, see Larry L. Leslie and Gary P. Johnson, "Equity and the Middle Class," 1974, pp. 134-136. It has been argued that this apparent *unwillingness* is really inability, resulting from the necessity to maintain an established standard of living.

from the other.[30] The data indicate a decline in participation in higher education of the middle-income group over the last decade, while the lower-income participation rate has increased slightly. The lower-income group has yet to achieve parity, even taking into account the middle-income group's declining participation rate. The question is whether the middle-income group will be subject to restrictive financial aid policies unless or until the lower-income group achieves parity. The concept of parity is based on the assumption that there are no nonfinancial reasons that might prevent low-income groups from participating in higher education. However, if the low-income group's nonfinancial reasons are compelling, that parity would be difficult to achieve regardless of the amount of financial aid available to them.[31] Additional funding aimed at assisting the middle-income group is not only feasible but is practicable, and would reduce greatly the present destructive pitting of class against class.

By way of background to this proposal for additional funding, attention is drawn first to some principles of taxation. Raising college prices, especially tuition, results in reduced higher education opportunities for middle-income persons. If tuition is viewed as a user tax,[32] it can be seen that the raising of tuitions affects those of lesser means most severely. All income groups pay essentially the same tuition amount, so that the varying "tax" *rates* are badly regressive. Tuition is not even as progressive as the uniform sales tax —often used as an illustration of regressive taxation—because, regardless of income, individuals essentially must all pay the same tuition for approximately four years. Thus, the effective tax rate for tuition is much higher for lower-income groups than for the higher-income groups. For example, an annual $1,000 tuition charge represents a 10 percent tax rate for a $10,000 income family, and a 1 percent rate for a $100,000 income family.

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[30] Again, the limitations of the data in this report are acknowledged. Further disaggregation of income categories is needed. Indeed, from shreds of available evidence, it is suspected that most of the existing inequities by income occur in relatively narrow bands of the income distribution. For example, the very lowest income group ($< $3,000 to $< $5,000) has a better participation rate than other low-income groups. Also, although some current definitions of the middle-income group range up to $30,000 annually, most of the present difficulties of this group appear to be experienced in the $10,000 to $15,000 income range, or perhaps up to $20,000 annually.

[31] As summarized in Fife's *Applying the Goals of Student Financial Aid* (1975), chapter 3.

[32] See Gary J. Johnson and Larry L. Leslie, "Increasing Public Tuition in Higher Education: An Alternative Approach to the Equity Issue," The *Educational Administration Quarterly*, 1976, pp. 27-42.

Tuition affects middle-income persons most severely because, while low earners can avoid some of this user tax by qualifying for need-based student aid, middle-income families can escape much less of the tax or none at all. Higher earners cannot escape the tax either, but the amount they pay represents a relatively small sum in relation to family earnings. The end result is that as higher education prices have risen, many middle-income students—unqualified for aid and having limited resources—have either opted out of the higher education market or found ways to reduce their total costs; e.g., attended lower-priced institutions, thereby reducing their college "choice."

The obvious, simple solution to this apparent inequity would be to improve on the progressive nature of the present general tax structure and, rather than continue to increase prices in higher education, to reduce or at least stabilize tuition prices while maintaining aid programs for low-income students. The political feasibility of this solution, however, is believed to be slight, partially because low tuitions aid the wealthy, too. Further, not only is tax reform a most difficult matter politically, but tuition reduction or stabilization could be accomplished only through substantially higher appropriations for institutional aid—believed to be a most unlikely occurrence at present.

A more feasible approach would be to extend current eligibility for need-based student aid programs to middle-income students, as recently was accomplished in the case of Federal Guaranteed Student Loans. As additional funds are appropriated for student aid programs, limited benefits should be made available to more students from the lower end of the middle-income distribution. Although all student aid programs should be broadened in this manner, the most politically viable vehicle for initial extension of eligibility is College Work Study (CWS). Working one's way through college is a time-tested and time-honored American tradition, and political support for extending CWS eligibility is considerable.

Tax credits are another option for providing financial relief from accelerating higher education costs.[33] Tax credit bills have now passed the Senate on several occasions; and, in 1976, for the first time for either political party, the administration removed its opposition to a tax credit bill. If the most-recent tax credit measure were adapted to allow payment to those without tax liability, it

[33] For a detailed discussion of various tax allowance options, see Larry L. Leslie, "Higher Education Tax Allowances: An Analysis," The *Journal of Higher Education*, 1976, pp. 497-521.

could become a vehicle for improving higher education access for low- and middle-income students.[34] The recent and encouraging gains made by low-income, minority, and female students would thus be broadened and the middle-income group would be partially buffered from the effects of higher prices.

A Final Comment—A responsible government should be engaged constantly in the setting of policy objectives and in the assessment of outcomes. Higher education financing policy is no exception. Yet, observers of recent higher education financing policies have noted that little has been done in either regard. Whereas it is true that some evaluation efforts are now in progress, no formal standards on which to judge the results exist. In this report, largely for reasons of convention, the author arbitrarily established the standard of enrollment rate parity in access, choice, and retention and completion. Given what is known about varying postsecondary aspiration rates and varying postsecondary-related values by social class, this standard is not fully defensible. Other, more valid standards should be developed. If this were accomplished, it would then be possible to ascertain more precisely when public policies have achieved their intended effects and, as a result, when public subsidies could be redirected to other, more pressing social needs.

[34] This assertion is based on marginal analysis. The presumption is that there presently are many potential students "at the margin" and that a modest reduction in net price would be sufficient to stimulate their enrollment.

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Appendix

Table A-1. High School Graduates and First-Time Degree-Credit Enrollment 1964-1975. (Resident and Extension Opening Fall Enrollment — in Thousands)

Year	Total High School Graduates	Year (Fall)	Total* First-Time Degree-Credit Enrollment	Percent (4) is of (2)
(1)	(2)	(3)	(4)	(5)
1963-64	2,290	1964	1,225	53.5
1964-65	2,665	1965	1,442	54.1
1965-66	2,632	1966	1,378	52.4
1966-67	2,679	1967	1,439	53.7
1967-68	2,702	1968	1,630	60.3
1968-69	2,829	1969	1,749	61.8
1969-70	2,896	1970	1,780	61.5
1970-71	2,943	1971	1,766	60.0
1971-72	3,006	1972	1,740	57.9
1972-73	3,037	1973	1,757	57.9
1973-74	3,069	1974	1,854	60.4
1974-75	3,139	1975	1,993**	63.5

*Estimated for all years prior to 1968.

**Estimated

Note: Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals. The percentage in Column 5 is expected to decline in 1976.

Sources: High school graduate data and estimates are based on U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, publications: (1) *Statistics of Public Schools*, annually, Fall 1964 through 1974, (2) *Statistics of Nonpublic Elementary and Secondary Schools*, 1965-66, and (3) *Nonpublic School Enrollments in Grades 9-12, and Graduates 1963-64*. Enrollment data from U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, publications: (1) *Opening (Fall) Enrollment in Higher Education*, annually, 1964 through 1968, 1971 through 1975, (2) *Fall Enrollment in Higher Education, Supplemental Information*, 1969 and 1970, and (3) data from *Resident and Extension Enrollment in Institutions of Higher Education*, Fall 1966 (unpublished).

Table A-2. College Costs Since 1971

Type of Institution	Resident Students						
	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Public institutions							
2-year	•	•	•	$2,024	$2,153	$2,411	$2,454
Tuition and fees	•	•	•	251	287	301	387
Room and board	•	•	•	1,032	1,086	1,213	1,222
Other expenses	•	•	•	741	780	897	845
4-year	$1,783	$1,875	$1,985	$2,242	$2,400	$2,679	$2,790
Tuition and fees	395	439	465	498	541	578	621
Room and board	847	890	945	1,042	1,116	1,272	1,304
Other expenses	541	546	575	702	743	829	865
Private institutions							
2-year	$2,380	$2,484	$2,540	$3,194	$3,617	$3,690	$3,907
Tuition and fees	1,144	1,192	1,210	1,389	1,578	1,652	1,740
Room and board	849	877	910	1,159	1,303	1,239	1,331
Other expenses	387	415	420	646	736	799	836
4-year	$2,974	$3,171	$3,280	$3,693	$4,039	$4,391	$4,568
Tuition and fees	1,517	1,652	1,725	1,942	2,089	2,240	2,329
Room and board	952	1,007	1,035	1,159	1,207	1,302	1,371
Other expenses	505	512	520	592	752	849	868
Proprietary institutions	•	•	•	•	$3,817	$3,822	$4,238
Tuition and fees	•	•	•	•	1,651	1,627	1,808
Room and board	•	•	•	•	1,387	1,363	1,480
Other expenses	•	•	•	•	779	832	950

•Insufficient data

Source: Based on data from *Student Expenses at Postsecondary Institutions*, College Scholarship Service, Annual.

Table A-2.

Type of Institution	Commuter Students						
	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77
Public institutions							
2-year	$1,430	$1,526	$1,635	$1,665	$1,922	$2,058	$2,223
Tuition and fees	168	185	200	251	287	301	387
Room and board	544	566	615	681	778	791	813
Other expenses	718	775	820	733	857	966	1,023
4-year	$1,531	$1,659	$1,760	$1,775	$2,085	$2,266	$2,448
Tuition and fees	395	439	465	498	541	578	621
Room and board	458	494	545	625	704	716	793
Other expenses	678	726	750	652	890	972	1,034
Private institutions							
2-year	$1,834	$1,993	$2,090	$2,583	$3,287	$3,421	$3,595
Tuition and fees	1,144	1,192	1,210	1,389	1,578	1,652	1,740
Room and board	341	382	395	647	917	850	902
Other expenses	349	419	485	547	792	919	953
4-year	$2,382	$2,599	$2,745	$3,162	$3,683	$3,950	$4,141
Tuition and fees	1,517	1,652	1,725	1,942	2,080	2,240	2,329
Room and board	398	469	525	721	796	778	840
Other expenses	467	478	495	499	807	932	972
Proprietary institutions	•	•	•	•	$3,414	$3,382	$3,726
Tuition and fees	•	•	•	•	1,651	1,627	1,808
Room and board	•	•	•	•	946	863	899
Other expenses	•	•	•	•	817	892	1,019

Table A-3. Estimated Average Charges (1974-75 Dollars) per Full-Time Undergraduate Resident Degree-Credit Student in Institutions of Higher Education, by Institutional Type and Control 1964-65 to 1976-77. (Charges are for the Academic Year and in Constant 1974-75 Dollars)

Year and Control	Total Tuition, Board, and Room					Tuition and Required Fees				
	All	Annual Percent Change	University	Other Four-Year	Two-Year	All	Annual Percent Change	University	Other Four-Year	Two-Year
1964-65[1]										
Public	$1,575		$1,742	$1,436	$1,057	$ 403		$ 494	$ 371	$ 164
Nonpublic	3,161		3,648	2,999	2,411	1,803		2,149	1,695	1,163
1965-66[2]										
Public	1,595	1.3	1,792	1,462	1,087	418	3.7	530	389	177
Nonpublic	3,253	2.9	3,756	3,078	2,526	1,872	3.8	2,220	1,762	1,246
1966-67[1]										
Public	1,615	1.3	1,842	1,489	1,117	433	3.6	566	407	190
Nonpublic	3,342	2.7	3,864	3,158	2,641	1,940	3.6	2,291	1,828	1,329
1967-68[2]										
Public	1,619	0.2	1,825	1,517	1,200	431	–0.5	557	408	218
Nonpublic	3,356	0.4	3,873	3,204	2,683	1,974	1.8	2,335	1,884	1,359
1968-69[1]										
Public	1,624	0.3	1,808	1,544	1,283	429	–0.5	548	408	247
Nonpublic	3,372	0.5	3,883	3,249	2,725	2,009	1.8	2,379	1,939	1,389
1969-70[2]										
Public	1,652	1.7	1,868	1,560	1,305	444	3.5	586	421	245
Nonpublic	3,473	3.0	4,004	3,319	2,734	2,103	4.7	2,481	2,015	1,418
1970-71[2]										
Public	1,680	1.7	1,928	1,576	1,327	459	3.4	624	434	243
Nonpublic	3,573	2.9	4,125	3,389	2,743	2,197	4.5	2,583	2,091	1,447

1971-72[2]										
Public	1,708	1.7	1,988	1,590	1,351	473	3.1	662	446	242
Nonpublic	3,672	2.8	4,248	3,458	2,751	2,291	4.3	2,685	2,166	1,475
1972-73[2]										
Public	1,701	–0.4	1,933	1,622	1,365	484	2.3	648	474	258
Nonpublic	3,604	–1.9	4,186	3,412	2,720	2,261	–1.3	2,660	2,148	1,468
1973-74[2]										
Public	1,692	–0.5	1,878	1,656	1,379	494	2.1	634	503	273
Nonpublic	3,536	–1.9	4,125	3,365	2,689	2,231	–1.3	2,635	2,129	1,460
1974-75*										
Public	1,708	0.9	1,903	1,682	1,420	503	1.8	653	515	285
Nonpublic	3,592	1.6	4,193	3,419	2,724	2,290	2.6	2,701	2,188	1,496
1975-76										
Public	$1,735	1.6	$1,933	$1,711	$1,460	$ 509	1.2	$ 658	$ 524	$ 287
Nonpublic	3,652	1.7	4,266	3,482	2,768	2,333	1.9	2,744	2,229	1,576
1976-77										
Public	1,769	2.0	1,963	1,739	1,501	537	5.5	685	554	349
Nonpublic	3,676	0.7	4,339	3,547	2,813	2,283	–2.1	2,684	2,184	1,568
Change, 1964-65 to 1976-77										
Public	194	12.3				134	33.3			
Nonpublic	515	16.3				480	26.6			

[1] Represents charges weighted by numbers of full-time degree-credit students for 1964-65; weighted by full-time resident students for 1966-67; by full-time undergraduate degree-credit students for 1968-69; by total full-time students for 1971-72; and by full-time equivalent resident degree-credit students for 1973-74. Publicly controlled 2-year institutions which reported a zero tuition charge are included in tuition calculations. Institutions which did not offer board or room are not included in calculations of average board or room charges. Charges shown in Table 3 in current dollars were converted to 1974-75 constant dollars by application of the Consumer Price Index.

[2] Interpolated.

*Estimated.

Sources: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Higher Education Basic Student Charges*, 1964-65, 1966-67, 1968-69, 1971-72, and 1973-74; (2) *Opening Fall Enrollment in Higher Education*, 1964, 1966, 1968, 1971, and 1973. Also, *Student Expenses at Postsecondary Institutions*, CSS, annual.

Figure A-1. Total, Degree Credit, and Non-Degree Credit Enrollment Growth Rates: Fall 1964 to 1975

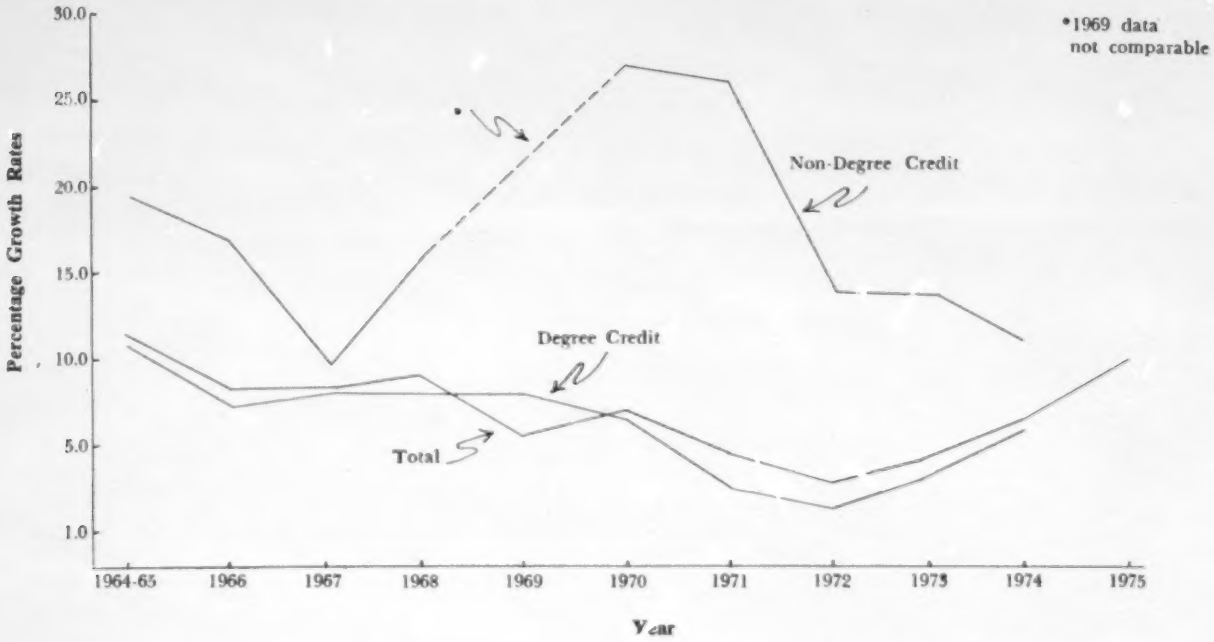
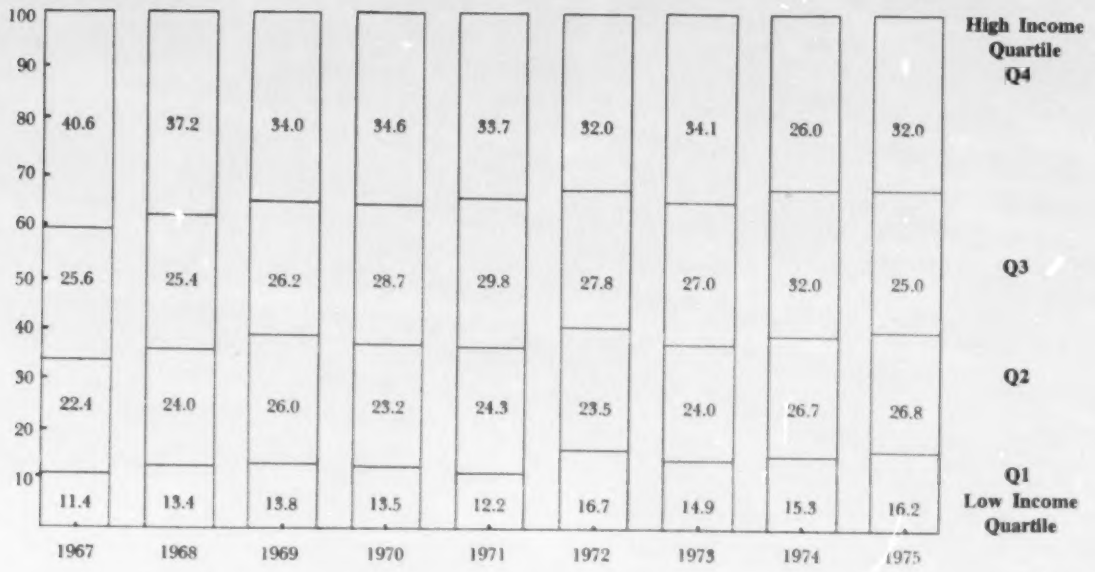


Figure A-2. Percentage of Entering Freshmen from Each Family Income Quartile, 1967 to 1975.



A-7

Table A-4. Means, Standard Deviations and Correlation Coefficients for All Variables

			Mean	Std. Dev.	Enrollment x1	Enrollment x2	Enrollment x3	Enrollment x4
x1	Enrollment Share	Male	57.56	1.86	–			
x2		Female[1]	42.44	1.86	-1.00	–		
x3		White[2]	89.07	1.85	0.52	-0.52	–	
x4		Non-White[2]	10.93	1.85	-0.52	0.52	-1.00	–
x5	Income[3]	Low	22.64	1.90	0.77	-0.77	0.26	-0.26
x6		Middle	36.67	3.08	0.93	-0.93	0.46	-0.46
x7		High	52.46	2.84	0.90	-0.90	0.46	-0.46
x8		Aid/Student[4]	496.22	295.54	-0.98	0.98	-0.58	0.58
x9		Cost/Student[5]	1,781.78	280.52	-0.98	0.98	-0.43	0.43
x10	Income[6]	Total	10,666.44	1,937.37	-0.99	0.99	-4.49	0.49
x11		White	11,077.00	2,040.92	-0.99	0.99	-0.48	0.48
x12		Non-White	6,843.56	1,168.04	-0.97	0.97	-0.45	0.45
x13	Unemployment Rate[7]	Total	5.14	1.55	-0.78	0.78	-0.42	0.42
x14		White	4.63	1.46	-0.75	0.75	-0.40	0.40
x15		Non-White	9.03	2.29	-0.81	0.81	-0.48	0.48
x16		Male	4.47	1.58	-0.74	0.74	-0.39	0.39
x17		Female	6.23	1.41	-0.78	0.78	-0.43	0.43

1 Portion of total enrollments.
2 Portion of freshman enrollments.
3 Participation rates for Primary Families with dependent members 18 to 24 years old enrolled full time in college.
4 Aid per student in dollars.
5 Cost per student in dollars.
6 Median family income in dollars by race.
7 Unemployment rate by race and sex.

Table A4.

Income[5]					Income[6]			Unemployment Rate[7]				
x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}	x_{14}	x_{15}	x_{16}	x_{17}
–												
0.89	–											
0.93	–0.98	–										
–0.69	–0.90	–0.85	–									
–0.71	–0.90	–0.86	0.98	–								
–0.67	–0.88	–0.83	0.98	0.98	–							
–0.67	–0.88	–0.83	0.98	0.99	1.00	–						
0.61	–0.85	0.78	0.97	0.98	0.99	0.99	–					
–0.39	–0.67	–0.56	0.84	0.83	0.82	0.82	0.85	–				
–0.36	–0.65	–0.54	0.82	0.81	0.80	0.80	0.83	1.00	–			
–0.45	–0.72	–0.62	0.87	0.84	0.84	0.83	0.85	0.99	0.99	–		
–0.35	–0.64	–0.52	0.81	0.80	0.80	0.79	0.83	1.00	1.00	0.98	–	
–0.40	–0.68	–0.57	0.84	0.82	0.82	0.81	0.84	1.00	1.00	1.00	1.00	–

Table A-5. Multiple Regression Analysis for Measures of Enrollment Rate Changes, by Income: 1967-1975

Variable	B	R^2 (cumulative)
Low Income		
Aid per full-time student ($)	- .0018	.473
Cost per student ($)	- .0066	.507
Total unemployment (%)	.8025	.684
Middle Income		
Aid per full-time student ($)	- .0049	.805
Cost per student ($)	- .0074	.821
Total unemployment (%)	.5390	.843
High Income		
Aid per full-time student ($)	- .0046	.715
Cost per student ($)	- .0081	.737
Total unemployment (%)	.9096	.811

Table A-6. Undergraduate College Enrollment Shares of Respondent Family Members 18 to 24 Years Old, by Institutional Level and Sector, and by Income: October 1974 (percentage)

	Family Income							
	Less than $10,000		$10-15,000		Over $15,000		All Levels	
Sector								
Public	82.2*	29.1**	79.6	24.2	73.5	46.7	77.3	100.0
Private	17.8	21.5	20.4	21.2	26.5	57.3	22.7	100.0
All	100.0	27.4	100.0	23.5	100.0	49.1	100.0	100.0
Level								
Two-Year	34.5	34.9	28.6	25.6	21.0	39.4	26.4	99.9
Four-Year	65.5	23.7	71.4	22.9	79.0	53.3	73.6	99.9
All	100.0	26.7	100.0	23.7	100.0	49.7	100.0	100.1

Note: Columns and rows may not add to 100.0 percent due to rounding.

* Column percentages—Read: 82.2 percent of students who were dependent members of primary families earning less than $10,000 were enrolled in public institutions.

** Row percentages—Read: 29.1 percent of all public institution enrollments were dependent members of primary families earning less than $10,000.

Source: *Current Population Reports, School Enrollment—Social and Economic Characteristics of Students* (Washington: U.S. Department of Commerce, Bureau of the Census), Series P-20, November 1975, p. 61.

Table A-7. Percentage of Office of Education Aid Distribution ($) to Types of Institutions—1972-1973

Type of Institution	Type of Aid (Percent) SEOG	CWS	NDSL	GSL	BEOG	Overall Enrollments
Public Four-year	50.1	53.3	50.7	51.6	39.3	54.3
Public Two-year	13.0	17.9	6.4	22.0	35.0	20.1
Private Four-year	34.9	26.3	40.9	24.5	18.5	24.1
Private Two-year	2.0	2.5	1.9	1.9	7.2	1.5
Total*	100.0	100.0	100.0	100.0	100.0	100.0

*Totals may not add to 100 due to rounding.

Source: Stanford Research Institute. *Student Aid: Descriptions and Options*, p. 53.

Table A-8. First-Time, Full-Time Enrollments Compared to First-Time State Aid Recipients Who Were Enrolled Full-Time, by Sector (Public or Private) (percentages)

	State Aid Program N.Y. (SIA)	N.J. (TAG)	N.J. (Scholar-ship)	Calif.	Pa.	Ill.	Average*
Aid Recipients Public	64.5	2.5	56.9	58.3	59.1	55.2	56.4
First-Time, Full-Time Enrollment Norms	64.8	7.9	71.9	88.6	58.1	74.5	73.6
Aid Recipients Private	35.5	97.5	43.1	41.7	40.9	44.8	43.6
First-Time, Full-Time Enrollment Norms	35.2	28.1	28.1	11.4	41.9	25.5	26.4

*Weighted by number of students in each state.

Source: *The College Student Grant Study*, Larry L. Leslie and Jonathan D. Fife. Center for the Study of Higher Education, The Pennsylvania State University, 1974.

Table A-9. First-Time, Full-Time Enrollments Compared to First-Time State Aid Recipients Who Were Enrolled Full-Time, by Institutional Level (percentages)

State Aid Programs	N.Y. (SIA)	N.J. (TAG)	N.J. (Scholar-ship)	Calif.	Pa.	Ill.
Aid Recipients University	21.4	39.7	34.1	76.6	40.9	35.4
First-Time, Full-Time Enrollment Norms	15.8	17.9	17.9	12.3	29.3	26.6
Aid Recipients 4 or 5-Year	30.8	53.1	55.0	23.3	45.6	85.4
First-Time, Full-Time Enrollment Norms	42.2	41.9	41.9	19.4	49.4	26.3
Aid Recipients 2-Year	44.4	7.3	8.0	.1	6.5	14.6
First-Time, Full-Time Enrollment Norms	42.2	40.3	40.3	68.3	21.3	47.2
Aid Recipients Other	3.4	0.0	2.2	0.1	7.0	0.0
First-Time, Full-Time Enrollment Norms	See note below.					

Note: Percentages may not equal 100.0 percent due to rounding.

Source: *The College Student Grant Study*, Larry L. Leslie and Jonathan D. Fife, Center for the Study of Higher Education, The Pennsylvania State University, 1974.

Table A-10. Average Total College Costs by Sex, Parental Income, and College Type

Parental Income	Two-Year Colleges Men	Two-Year Colleges Women	Four-Year Colleges Men	Four-Year Colleges Women
Less than $8,000	2,145	1,852	2,801	2,558
$8,000 - $19,999	1,951	1,851	2,931	2,810
$20,000 or more	2,220	2,159	3,496	3,504

Source: *The American Freshman: National Norms for Fall 1975, ACE.*

Table A-11. Proportion of High School Graduates Enrolled in College in October of the Year of Graduation: 1962-75 (percentages)

Year of Graduation	All Graduates	Graduates			
		Men	Women	White	Black and Other Races
1962	49	55	43	51	34
1963	45	52	39	46	38
1964	48	57	41	49	39
1965	51	57	45	52	43
1966	50	59	43	52	32
1967	52	58	47	53	42
1968	55	63	49	57	46
1969	54	60	47	55	37
1970	52	55	49	52	48
1971	53	58	50	54	47
1972	49	53	46	49	48
1973	47	50	43	48	35
1974	48	49	46	47	51
1975	51	53	49	51	46

Source: Bureau of Labor Statistics Series, *Employment of High School Graduates and Dropouts*, Annual.

Table A-12. Enrollments by Race: 1970-1975

Sample Group	1970	1971	1972	1973	1974	1975	1970-1975 Change
Black Students							
At public institutions	422,000	532,000	582,000	537,000	659,000		
At private institutions	100,000	148,000	145,000	147,000	155,000		
Men	253,000	363,000	384,000	358,000	422,000		
Women	269,000	317,000	343,000	326,000	392,000		
Total	522,000	680,000	727,000	684,000	814,000	944,000	422,000
12-month change	+6.1%	+30.3%	+6.9%	−5.9%	+19%	+16%	80.8%
All Races							
At public institutions	5,699,000	6,271,000	6,337,000	6,224,000	6,905,000		
At private institutions	1,714,000	1,816,000	1,976,000	1,955,000	1,922,000		
Men	4,401,000	4,850,000	4,853,000	4,677,000	4,926,000		
Women	3,013,000	3,236,000	3,460,000	3,502,000	3,901,000		
Full-time	5,763,000	6,199,000	6,309,000	6,083,000	6,345,000		
Percent full-time	77.7%	76.7%	75.9%	74.4%	71.9%		
Part-time	1,650,000	1,883,000	1,999,000	2,090,000	2,476,000		
Total	7,413,000	8,087,000	8,313,000	8,179,000	8,827,000	9,700,000	2,287,000
12-month change	−0.3%	+9.1%	+2.8%	−1.6%	+7.9%	+9.9%	+30.9%

Primary Families With One or More Members 18 to 24 Years Old Attending College Full-time by Race and Spanish Origin: October 1974 (Percentages)

White	Black	Spanish Origin
36.4	22.1	22.4

Source: *Current Population Reports, School Enrollment—Social and Economic Characteristics of Students* (Washington: U.S. Department of Commerce, Bureau of the Census), Series P-20.

Table A-13. Multiple Regression Analysis for Measures of Enrollment Share Changes: by Race, 1967-1975

Variable	B	R^2 (cumulative)
White		
Aid per full-time student ($)	- .023	.337
Cost per student ($)	.025	.775
White income ($)	- .001	.788
White unemployment (%)	.188	.795
Nonwhites		
Aid per full-time student ($)	.025	.336
Cost per student ($)	- .025	.775
Nonwhite income ($)	.516	.780
Nonwhite unemployment (%)	- .264	.795

Table A-14. Proportion of First-Generation College Freshmen, by Race, in Public and Private Four-Year Colleges and Universities

	Private	Public	Total
Total	43.0	56.9	51.8
Race			
Nonblacks	40.1	55.0	49.6
Blacks	71.8*	80.8	77.1
(N)	(329,719)	(575,813)	(905,532)

*To read: 71.8 percent of all blacks in private four-year institutions were first-generation students.

Source: Engin I. Holmstrom, "Higher Education and Social Mobility: A Promise Still Kept," 1976.

Table A-15. College Enrollment of the 1971 Freshman Class: October 1971 to October 1974

Race and Sex	Number enrolled[1] (in thousands)				Percent of first-year students in 1971			
	Freshman (1971)	Sophomore (1972)	Junior (1973)	Senior (1974)	Freshman (1971)	Sophomore (1972)	Junior (1973)	Senior (1974)
Total	2,438	1,965	1,476	1,360	100.0	80.6	60.5	55.8
Male	1,331	1,152	851	811	100.0	86.6	63.9	60.9
Female	1,107	813	625	549	100.0	73.4	56.5	49.6
White	2,166	1,760	1,306	1,238	100.0	81.3	60.3	57.2
Male	1,194	1,041	764	732	100.0	87.2	64.0	61.3
Female	971	719	541	506	100.0	74.0	55.7	52.1
Black	232	178	142	95	100.0	76.7	61.2	40.9
Male	114	95	73	54	100.0	83.3	64.0	47.4
Female	118	83	69	41	100.0	70.3	58.5	34.7

[1] Students 16 to 34 years old.

Note: This is an approximation of retention rates based on annual data on total number of persons in each college class.

Source: *Current Population Reports, School Enrollment—Social and Economic Characteristics of Students: October 1974* (Washington: U.S. Department of Commerce, Bureau of the Census, 1975), Series P-20, No. 286.

Table A-16. Completion Rates for a Selected Sample of the Class of 1970, Four Years After Entering College (percent)

Sample Group	Returned for 2nd Yr.	Received a Degree*	Received Degree or Still Enrolled
Two-Year Colleges:			
Men	67.0	36.6	38.9
Women	64.5	41.2	42.8
Blacks	62.3	29.4	30.6
Nonblacks	66.2	39.0	41.1
All students	66.0	38.4	40.5
Four-Year Colleges & Universities:			
Men	78.7	45.2	60.7
Women	77.1	48.6	55.7
Blacks	75.8	42.1	56.2
Nonblacks	78.1	47.0	58.6
All students	78.0	46.0	58.5

Source: *The American Freshman: National Norms for Fall 1967*, ACE.

*Associate or bachelor's degree.

Table A-17. Proportion of First-Generation College Freshmen, by Sex, in Public and Private Four-Year Co'leges and Universities

First Generation Freshmen	Private	Public	Total
Total	43.0	56.9	51.8
Sex			
Men	46.4	57.6*	53.6
Women	39.1	56.1	49.9
(N)	(329,719)	(575,813)	(905,532)

*To read: 57.6 percent of all men in public institutions were first-generation students.

Source: Engin I. Holmstrom. "Higher Education and Social Mobility: A Promise Still Kept," 1976.

Table A-18. Multiple Regression Analysis for Measures of Enrollment Share Changes: by Sex, 1967-1975

Variable	B	R^2 (cumulative)
Male		
Aid per full-time student ($)	- .0032	.969
Cost per student ($)	- .0017	.978
Total median family income ($)	- .0003	.980
Male unemployment (%)	.1872	.989
Female		
Aid per full-time student ($)	.0037	.969
Cost per student ($)	.0018	.978
Total median family income ($)	.0003	.980
Female unemployment (%)	.2259	.989